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IN THE

Supreme Court of the United States

OCTOBER TERM, 1966

No. 354

JACK D. GAY, Trustee for Shareholders of Northwest Uranium Mines, Inc., Et Al., *Petitioner*

v.

THE UNITED STATES OF AMERICA, *Respondent*

PETITION FOR A WRIT OF CERTIORARI TO THE COURT OF CLAIMS OF THE UNITED STATES

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Petitioner prays that a writ of certiorari issue to review the judgment of the Court of Claims entered in the above-entitled case on February 18, 1966.[1]

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[1] The full title of this case is Jack D. Gay, Trustee for Shareholders of Northwest Uranium Mines, Inc., a corporation in liquidation, Silver Buckle Mining Company, a corporation, Idaho First National Bank Building, Wallace, Idaho. (For an explanation of the relative interests of the parties, see Findings 31-34, Appendix A, pp. 50-51a.) We are concerned almost exclusively here with the activities of Northwest. Although there are more than 800 shareholders in this corporation, we are primarily concerned here with the activities of Messrs. Wilson, Scott, Gay and Porter.

CITATIONS TO THE OPINION BELOW

The opinion of the Court of Claims is reported at 356 F. 2d 516 (1966), and is printed in Appendix A, *infra.* Those findings of the Commissioner which were affirmed by the Court of Claims and made a part of its opinion are also printed in Appendix A.

JURISDICTION

The judgment of the Court of Claims was entered on February 18, 1966; petitioner was granted an extension of time within which to file the petition for certiorari to and including July 18, 1966. The jurisdiction of this Court is invoked under 28 U.S.C., Section 1255(1). Jurisdiction in the Court of Claims was based upon 28 U.S.C. § 1491, as amended.

QUESTIONS PRESENTED

1. Did the Court of Claims err by failing to find that there came into existence between the petitioner and respondent either:

   a) a bilateral implied in fact contract proved by the acts and conduct of the parties;

   b) a unilateral contract under which the respondent would purchase petitioner's uranium *concentrate,* such a contract being called into existence by respondent's continuing offer to contract, which offer petitioner accepted by tendering its uranium *concentrate* to respondent before such offer was revoked;

   c) A unilateral contract under which the respondent would purchase petitioner's uranium-bearing *ores,* such a contract being called into existence by respondent's continuing offer to contract, which offer petitioner accepted by tendering its uranium-bearing *ores* to respondent before such offer was revoked?

2. Did the Court of Claims err in failing to apply Section 90 of the Proposed Restatement of Contracts here in order to avoid injustice to petitioner?

STATEMENT OF THE CASE

This case presents simple questions of contract law; however, the questions are deceptive in their simplicity because underlying the questions is a most difficult, involved and complex fact situation. Moreover, the questions presented can only be appreciated and decided properly by a re-creation of the emotional and psychological climate existing at the time of the events in question, which in turn can only be done (if at all) through a detailed development of the facts of the case as they unfold. Before beginning the factual development a brief capsule summary of this case will be made to lend perspective to the unfolding facts.[2]

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[2] Because of the voluminous record, the complexity of facts, and the technical nature of much of the subject matter, this petition will necessarily have to be more lengthy than the typical petition for certiorari. To facilitate understanding of the technical aspects of the case, petitioner has included explanations wherever necessary. This serves to lengthen the petition, but, hopefully, it will assist the Court in its understanding of the case. Moreover, because we are here concerned with a contract question involving offer and acceptance, detailed development of what each party actually did is necessary. Finally, due to the nature of the case, the normal format utilized in petitions for certiorari is not entirely appropriate. Petitioner is faced with the problem of presenting the facts involved in the statement of the case in an objective form, and additionally, because such facts are necessary to petitioner's argument, they must be developed in an argumentative form in the "Reasons for Granting the Writ" section. Such treatment would be duplicative. Petitioner has therefore resolved this question in favor of a two-part Statement of the Case, Part I being an objective capsule summary of the case in outline form with Part II being an argumentative detailed factual development. This will obviate the necessity of a second detailed factual development in the "Reasons" section.

PART I.

Petitioner brought suit in the Court of Claims seeking recovery of the damages it suffered because of the failure of the Atomic Energy Commission [Hereinafter AEC or Commission] to formalize a contract to purchase petitioner's uranium ores, and/or to formalize a contract for the purchase from petitioner of 1,200,000 pounds of recoverable uranium concentrate. Upon pre-trial stipulation of the parties, and with the consent of the trial commissioner, trial was limited to the issue of liability (i.e., was there a contract and, if so, did the Government breach it?), the question of damages being reserved for further proceedings. Only the contract question is now properly before this Court.

Hearings were held before the trial commissioner, and petitioner presented its evidence. By this evidence, petitioner attempted to demonstrate the following: that, during the period 1948 through October 28, 1957 and more particularly during the period July 1955 through October 28, 1957, the AEC had, by its activities, practice, customs and established policies, made what constituted a *continuing offer* to the uranium industry to purchase all amenable uranium-bearing *ores,* providing the *ores* could be economically processed and the U_3O_8 contained therein extracted. This continuing offer was revoked by public announcement on October 28, 1957. Prior to the revocation of this continuing offer to purchase *ores,* Northwest established beyond a doubt it could deliver to the AEC 702,537.08 tons of uranium *ores* averaging .1224% U_3O_8 containing a minimum of 1,200,000 recoverable pounds of uranium *concentrate,* which *ores* were easily amenable to treatment and concentration and were well

within all the terms and conditions of the continuing offer. Petitioner tendered its ore reserves to the AEC on July 13, 1957 and on October 9, 1957, and this tender, petitioner contended, constituted an *acceptance* of the respondent's continuing offer.

Secondly, petitioner's evidence showed that the AEC had, during the previously noted periods, by its customs, announced policies, and established practices made a *continuing offer* to the uranium industry to formalize a uranium *concentrate* contract provided certain conditions could be met, and that petitioner met all of these conditions and was therefore entitled to a formal contract for uranium *concentrate*. Petitioner further presented evidence demonstrating that on May 24, 1956, the AEC promulgated an announcement which bound the Government in accordance with the terms and conditions therein to enter into a formalized contract with petitioner for the purchase of *uranium concentrate*. Finally, petitioner's evidence proved that petitioner tendered its ore reserves to the AEC in July and October of 1957 in conformance with respondent's purchase requirements for *uranium concentrate*, but that respondent failed to formalize a contract with petitioner to purchase such *concentrates*.

At the conclusion of the petitioner's case in chief, respondent moved for judgment of dismissal under the provisions of Rule 48(c) of the Rules of the Court of Claims. Statements and briefs were presented by the parties and the trial commissioner subsequently entered an order granting respondent's motion. After requests for findings were filed by the parties, the trial commissioner filed a report, adopting, for the most part, the findings proposed by respondent.

Petitioner thereafter filed a notice of exception to the commissioner's finding and filed a brief before the Court of Claims containing exceptions to the commissioner's findings and petitioner's proposed findings. The Court of Claims affirmed the commissioner's findings for the most part and held that "there was no contract, either unilateral or bilateral [between the parties], and accordingly [we] give judgment for the defendant." (Appendix A, p. 2a.)

PART II.

A. The AEC's Continuing Offer To Purchase Ores and Concentrates

This case grows out of the post-World War II "uranium panic," created by the critical and urgent military need for uranium ores and concentrate. In 1948 the United States had no established uranium reserves to speak of. The AEC policy makers, urged on by the Congress, decided that uranium exploration within the United States would have to be encouraged to the greatest degree possible as fast as possible. Perhaps the best statement of the urgency of this situation is that made in a subsequent AEC pronouncement that

> "probably no military program undertaken by this country in peacetime has been considered more important, or given higher priority, than the atomic weapons program following the breakdown of the 1946-47 discussions in the United Nations Atomic Energy Commission for control of nuclear weapons." (D. Ex. 1, 4/17/59, p. 4).[3]

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[3] Citations are to the record certified by the Court of Claims to this Court. Citations to exhibits (also certified to this Court) will often be necessary because much of what petitioner alleges to be respondent's continuing offer to contract is contained in the speeches and press releases which are exhibits in this case.

As found by the commissioner and affirmed by the Court of Claims:

> "A domestic uranium industry was practically nonexistent when the Atomic Energy Commission was created [on] . . . August 1, 1946 . . ."[4]

The problem facing the AEC was, simply stated, to create a uranium industry in the United States sufficient to meet the military needs as fast as possible. The Commission was therefore authorized and directed to

> "take, requisition, condemn, or otherwise acquire, supplies of source materials . . . to the extent it deems necessary to effectuate the purposes of the Act . . . The Commission may establish guaranteed prices for all source materials delivered to it within a specified time."[5]

Faced with the mammoth task of creating an entire industry in the briefest possible period, the Congress mandated the AEC to rely upon private enterprise as its medium for extensive and rapid expansion of uranium ore exploration, mining and concentration. (See D. Ex. 1, 1/29/54, p. 1).[6] As found by the Commissioner, affirmed by the Court of Claims,

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[4] Findings of the commissioner, as approved and adopted by the Court of Claims, Finding 3, Appendix A, p. 20a. [Hereinafter "findings."].

[5] Finding 4, Appendix A, p. 21a.

[6] Perhaps it would be profitable at this point to sketch a brief word picture of the total process whereby uranium is produced. The raw source material for uranium is found in well over a hundred uranium bearing minerals. (Glossary of Uranium and Thorium Bearing Minerals, 3rd Ed.). The ultimate object of all raw material procurement activities is the refinement of a high-grade concentrate. (It is immaterial from what type of ores the final concentrate is derived since the uranium derived from one ore is the same as the uranium processed from any other uranium

> "the announced policy [of the AEC] was to stimulate private industry to engage in widespread prospecting, exploration and development of uranium ore reserves, and, since the United States was to be the sole purchaser of uranium, to give adequate guarantees as to the price and period of purchase in order that private industry could finance and operate uranium mines and mills." Finding 11, Appendix A, at p. 24a.

Private enterprise responded vigorously to the AEC's inducements and importunings. It did so based upon its understanding of the AEC's policy of an unlimited purchase program of source material based upon a guaranteed uranium market. The AEC's policy in this regard is really only understood by reference to some of the numerous speeches made by top-level agency personnel. Excerpts from these speeches have been collected as Appendix B (p. 79,

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bearing ore. (Tr. 532; 963-64; 1355)). Once having found the raw source material, the producer would then have to either build a mill to process his ore supply, or else have his ores processed through another mill. A producer milling his own ore deposits was said to be producing from "captive ores"; when he milled the ores emanating from a raw material source other than his own, he was milling "custom ores." The AEC program contemplated utilization of both captive and custom ores. In fact, during the early part of the program the AEC required "captive" millers to set aside 25% of their production facilities for the processing of "custom ores," and the AEC also set up buying stations where it would purchase the ores itself. Whether the producer was processing his own captive ores or another's custom ores, the final result intended from the processing was the production of uranium concentrate, also commonly referred to as "yellow cake." The principal constituent of yellow cake is uranium oxide, U_3O_8. This final product is precipitated from the treated material by one of a variety of metallurgical processes. It was this uranium concentrate that the AEC desired to purchase, although, as noted, it would periodically, especially in the early stages, purchase the unrefined ores. (See generally Finding 6, Appenlix A, p. 6a.)

infra) herein and petitioner respectfully invites the Court's attention to this collection of comments. (It makes for most extraordinary reading.) By way of summary, these pronouncements dramatically demonstrate that top-level AEC executives were most eager to contract with anyone who could find uranium bearing ores which were amenable to a concentration process, and that they were literally imploring the mining industry to go forth and find uranium.

In addition to these addresses the AEC issued many official press releases and gave wide publicity to the establishment of buying stations, the negotiation of proposed mill contracts, the signing of mill contracts, the expansion of mills and extensions of mill contracts, and the establishment of pilot plants to develop new metallurgical processes to accommodate the many types of uranium ores.[7] (D. Ex. 1, 5/12/56, p. 7; see generally D. Ex. 2). The purpose of the establishment of buying stations throughout the western United States by the AEC was to stimulate the discovery and development of uranium-bearing ores and to provide a ready market. (See D. Ex. 2, P.R. [Press Release] 7, p. 1, par. 3; P.R. 71, par. 5; P.R. 85, par. 3; P.R. 91, par. 4; P.R. 93, par. 5; P.R. 106, par 3; P.R. 107, par. 3; P.R. 109, par. 4.) In addition, on May 24, 1956, the AEC issued a public announcement (D. Ex. 2, P.R. 150) concerning a new domestic uranium procurement program declaring: "The new domestic procurement program provides a *guaranteed market* for all uranium concentrates produced by domestic mills from domestic ores . . ." (Emphasis added.)

[7] In addition to all of these activities, the commissioner, affirmed by the Court of Claims, specifically found (Finding 12, Appendix A, pp. 24-25a) that the AEC carried on numerous other activities in order to vigorously promote uranium exploration and production.

The data developed above and in Appendix B is but a small sampling of the public announcements of the AEC with respect to its uranium purchase policies up until October 28, 1957, the point in time when it prospectively announced a policy change of future limited purchases. The statement by the Court of Claims that "prior to 1957 the Government was conducting a very aggressive uranium development program" seems, in light of the foregoing, something of an understatement. (Appendix A, p. 7a.)

Certainly it is relevant to inquire here as to what the understanding of the mining industry was as to the uranium procurement program of the AEC as promulgated and administered from the inception of the program until the policy change on October 28, 1957. Petitioner believes that the foregoing public announcements of the AEC speak for themselves and clearly demonstrate that from the inception of the uranium procurement program until October 28, 1957, the AEC engaged in an *unlimited purchase program of uranium source material,* and that it vigorously promulgated this program to the mining industry, with the intent that it should act in reliance on the representations made. If all of the foregoing does not unequivocally and conclusively establish this fact, the statement of Mr. Johnson, the AEC's Director of Division of Raw Materials, does. He stated in 1959 that "until the end of 1957 [the Commission] continued to buy *all* uranium available in the United States."[8] (D. Ex. 1,

[8] The Court of Claims specifically found in this regard that "it was widely assumed that the Government stood ready to buy all the uranium anyone could find." (Appendix A, p. 8a.) Moreover, Richard W. Cook of the AEC stated in 1954 that "the defense program requires all the uranium we can get." (D. Ex. 1, 5/8/54, p. 16.) Mr. Johnson stated that "the objective was to get as much immediate production as possible and to provide practical incentives for widespread private exploration and development." (D. Ex. 1, 10/28/57, pp. 2-3.)

4/17/59, p. 7) (Emphasis added.) Thus the record in this case indisputably shows that, first, the Commission established and guaranteed the uranium market; then, private enterprise, particularly the mining industry, being assured a guaranteed market for economically amenable ores and acceptable concentrates, and prodded by the repeated inducements of the Commission, engaged in the widespread search for and development of uranium.

The next relevant consideration in this case is the question of price that the Government was willing to pay for uranium. Early in the uranium procurement program the AEC did not establish a uniform price at which it would purchase uranium concentrate from the mill; however, commencing on April 11, 1948, the AEC issued Domestic Uranium Circular No. 1. In that Circular the Commission promulgated guaranteed minimum prices to be paid for the delivery to the Commission of uranium ores and mechanical concentrates, the guaranteed prices to extend for ten-years—until April 10, 1958. The announced purpose of this price guarantee program was "To stimulate domestic production of uranium." (Finding 15, Appendix A, p. 15a).

Domestic Uranium Circular No. 5 was published simultaneously with Circular 1. This Circular was effective through 1954, but was later reissued and made effective through March 31, 1962. It established guaranteed minimum prices for ores of a lower grade than those embraced in Circular 1; specifically, it provided guarantees for "ores of the Colorado Plateau area, commonly known as carnotite-type or roscoelite-type ores," so long as the ores assayed 0.10 per cent U_3O_8. The purpose of the establishment of the

guaranteed prices for these ores was the same as that announced in Circular 1—"to stimulate domestic production of uranium-bearing ores."[9]

On May 24, 1956, the AEC issued a public announcement concerning a new domestic uranium procurement program. This announcement was made because of the AEC's realization that in order to maintain a high exploration and development rate by private industry to satisfy military requirements, a guaranteed market for a period extending beyond the termination of Circular 5 (March 31, 1962) would have to be established. (Tr. 1518-19.) The AEC announcement of May 24, 1956 noted the establishment of a new domestic uranium procurement program for the period from April 1, 1962 through December 31, 1966. The price established was $8.00 per pound of U_3O_8 contained in normal mill concentrates or precipitates. The announcement noted that

> "*this action was taken in recognition of the need for a continuing Government market in order to maintain a high rate of exploration and development.* Although domestic uranium production has shown a remarkable expansion, known ore reserves will be greatly depleted by 1962 *unless extended by aggressive development and exploration.* A high rate of discovery is essential if substantial production is to be maintained after that date. The new domestic uranium procurement program *provides assurance* of a government market for an additional period of almost five

[9] In addition to these circulars, the AEC also promulgated Circulars 5 and 6 which provided large dollar bonuses for the discovery and production of uranium ores.

years beyond March 31, 1962. *This assurance will assist uranium mining and milling firms in planning future operations.*"[10] (Finding 23, Appendix A, pp. 40a-41a.) (Emphasis added.)

It should be noted also that, with respect to Circular 1, the Court of Claims specifically found in *Radium Mines, Inc.* v. *United States,* 139 Ct. Cl. 144, 153 F. Supp. 403 (1957), that this Circular was a *continuing offer* by the Government to contract with anyone who could put himself into a position to supply the ore therein specified, or the refined concentrates described in the Circular. It is petitioner's position that, by a parity of reasoning, Circular 5, as supplemented by the May 24, 1956 announcement, must also be held to be a continuing offer with respect to the ores and concentrates therein specified, and that petitioner accepted that offer by tendering to the Commission 702,537.08 tons of uranium ores averaging .1224% U_3O_8 and containing a minimum of 1,200,000 recoverable pounds of uranium concentrate, which concentrate

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[10] On February 6, 1959, Mr. Johnson made the following remarks about the impetus given to the uranium procurement program by the May 24, 1956 announcement:

> The extensive exploration which followed that announcement was most successful. Private exploration drilling, which was estimated at five and a half million feet in 1955, was in excess of nine million feet in 1957. Ore reserves which were estimated at 30,000,000 tons at the beginning of 1956, now are in excess of 80,000,000 tons. *Therefore, nearly 70 percent of today's reserves were developed in the last three years . . .*" (Tr. 1514-23.) (Emphasis added.)

was to be derived from petitioner's established reserves.[11]

B. Petitioner's Activities in Acceptance of Respondent's Offer in Reliance on Respondent's Representations

In view of all of the foregoing, it is small wonder that the organizers of petitioner, who were all experienced and highly qualified in the mining and milling industry, became interested in the exploration for and development of uranium. In fact, petitioner's personnel worked more than 2½ years in the exploration and drilling, planning and development of its ore reserves, all in reliance on the AEC's representatoins. For this effort, petitioner Northwest received two years of encouragement, inducement and importunings from the AEC—for the final one-half year it received a decided cold shoulder, avoidance, and, as one of petitioner's executives testified, the "brushoff" from the AEC.

1. Summer 1955 - January 1, 1956

Exploration, Discovery of Uranium-Bearing Ore Deposit, Preliminary Drilling, Notification to AEC.

Petitioner's interest in uranium prospecting in the northwest grew in part out of the late 1954 discovery of uranium-bearing ore deposits on the Spokane Indian Reservation, located about forty miles northwest of Spokane. In pursuance of its exploration activities, petitioner purchased an airplane and hired an experi-

[11] Although the guaranteed minimum price for uranium-bearing ores in Circular 5 was, by its terms, limited to carnotite-type and roscoelite-type ores of the Colorado Plateau area, the Commission, by administrative practice, policy and custom provided a guaranteed minimum price for *all* uranium-bearing ores economically and metallurgically amenable to treatment irrespective of the type of ores involved or the geographical location of the uranium deposit. (See Finding 21, Appendix p. 21.)

enced pilot to assist in conducting an airborne reconnaissance program in the Spokane area. During the summer and early fall of 1955 petitioner's personnel made numerous flights over this area, employing a "scintillometer" in the low-flying airplane to detect radiation "anomalies" which might indicate existence of uranium-bearing ore deposits. As a result of these exploration activities, petitioner discovered an ore deposit on the Spokane Indian Reservation. Petitioner thereafter purchased the prospecting permits of two Spokane Indians, Clarence Peters and Raymond Boyd, and began exploration on the land covered by the permits. Between October 21, 1955—the date the Peters' permit was assigned—and December 1, 1955, Northwest carried on extensive bulldozing activity on the Peters' lease. In November of 1955, Mr. Hetland of the AEC's Spokane office visited Northwest's property and subsequently submitted a preliminary report for the AEC based upon his findings.

Also in November of 1955, Mr. Clark Wilson, one of the organizers of Northwest, who was a graduate and registered geological engineer, with a Masters in Geology from the University of Arizona, and who had completed the advance management course at Harvard Business School, visited the Defense Minerals Exploration Administration (DMEA) office in Spokane, Washington, to inquire about the possibility of a mineral exploration program on the Northwest property. (After extensive negotiations with DMEA personnel, Northwest's application was approved and a contract was executed by DMEA in June 15, 1956. Subsequently the DMEA certified the discovery of ore deposits on the Northwest property.)

On December 10, 1955, Mr. Wilson wrote to the manager of the Grand Junction Operations Office, Grand Junction, Colorado, which was the AEC office in charge of all domestic raw material procurement in all areas west of the Mississippi River. (Mr. Allan Jones was the manager of Grand Junction at the times most pertinent to this case.)[12] In this letter, Mr. Wilson advised Mr. Jones that Northwest had a favorable uranium prospect on the Spokane Reservation and that chemical assays indicated a good commercial deposit. Mr. Wilson went on in his letter to state that there were three possible alternative ways to deal with this discovery: (1) For Northwest to build an integrated mining and milling operation; (2) For Northwest to share mill ownership with another uranium company in the area; (3) For Northwest to have its ore milled by another company on a toll basis, i.e., for Northwest to haul its ore to another mill and pay them a toll for milling it.[13] (See Finding 38, Appendix A, p. 53.) By letter of December 14, 1955, Mr. Allen E.

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[12] The Grand Junction office was the key AEC uranium procuring installation in the West. Mr. Jones was specifically delegated by the AEC to negotiate contracts with uranium miners and producers.

[13] The Court of Claims stated in its opinion that "the substance of this letter was that Northwest was interested in a contract providing that the AEC purchase concentrate from Northwest ore treated by a milling company on a toll basis." (Appendix A, p. 9a.) Even a superficial reading of Mr. Wilson's letter would negate such an interpretation. The letter forthrightly proposes three possible alternatives. This point is important because it marks the beginning of a subtle but insidious interpretation on the part of the Court that petitioner was only interested in the one alternative. Compare the first sentence of Mr. Jones reply, *infra*, p. 17. He interprets the letter properly. The Court's interpretation is "clearly erroneous" by any measure.

Jones responded to Mr. Wilson's inquiries, stating, *inter alia:*

> "*If you are interested in the possibility of constructing a mill to process ores produced in the Spokane area,* the procedure followed by the Commission is to consider detailed proposals submitted by private companies for the construction and operation of a plant and the sale to the Commission of uranium concentrates produced. Concentrates meeting required specifications are purchased by the Commission at unit prices under the terms of negotiated contracts.
>
> In formulating a proposal, the company should make a through investigation of the potential ore supply, possible mill sites, possible processing methods, and the cost of contructing and operating a mill for the efficient treatment of the particular ores.
>
> * * *
>
> We are very pleased to learn of your company's interest in the Spokane area and are ready to discuss further with you the possibility of constructing a plant in the area should your investigation of the available ore reserves appear to justify a plant operation." (Finding 39, Appendix A, p. 9a.) (Emphasis added.)

2. Spring 1956 - January 3, 1957

AEC and Petitioner Work Closely in Development of Ore Deposits.

During this period, petitioner, in specific response to Mr. Jones' admonition that Northwest should "make a through investigation of the potential ore supply, possible mill sites, etc.," expended large sums of money and hundreds of un-recompensed man hours in an attempt to prepare the reserves for tender to the AEC. Moreover, Northwest worked closely during this period with AEC personnel, counseling with them and receiv-

ing assistance and encouragement from them. It would unduly lengthen this petition to try to catalog all of these contacts; petitioner therefore proffers the following summary of these contacts, and invites the Court's attention to Appendix C (p. 82, *infra*) wherein a more detailed summary with citations to the record is contained. During the above-noted time period the AEC engaged in the following activities *vis-a-vis* petitioner and its ore deposit:

1. The Spokane office director visited the Northwest property over fifteen times to check on the progress of activities and to lend technical advice.
2. The AEC took numerous uranium samples for assay.
3. The AEC reviewed Northwest's radiometric log books and contour maps on a number of occasions.
4. The AEC did extensive mapping of the Northwest reserves.
5. The AEC prepared an estimate of the ore reserves.
6. Correspondence passed between petitioner and the AEC personnel on a number of occasions concerning technical aspects of the development of the ores and as a means of keeping the AEC apprised of petitioner's activities.
7. During the summer of 1956, Mr. Jesse C. Johnson, Director, Division of Raw Materials, the Chief Executive in the AEC charged with the duty of acquiring uranium ores and concentrates, visited the Northwest property with a complement of AEC personnel and *expressed his pleasure with the Northwest discovery*. (Tr. 564, 631; 1481; see Jt. Ex. A, Item 14, par. 1.)

Relevant also to the above consideration of the activities of Northwest and the AEC are the activities of the

Dawn Mining Company, which was the company operating the first discovery on the Spokane Reservation (made in the fall of 1954.) During late 1955 Dawn representatives initiated discussions with the AEC with respect to prospective milling facilities and a concentrate contract, which negotiation culminated in a contract between the parties on August 9, 1956, providing for the operation by Dawn of a uranium processing mill to be constructed within 12 months and to be located forty miles northwest of Spokane, Washington. Dawn Mining Company had employed Mr. R. R. Porter to design its mill. The commissioner found Mr. Porter to be "a recognized and well qualified metallurgist with substantial experience in the milling of concentrates from uranium-bearing materials and the design of processing mills for this purpose." (Finding 43, Appendix A, p. 43a.)

In September of 1956, Mr. Wilson contacted Mr. Porter, Dawn's consulting metallurgist; at that time Northwest was in the process of drilling its ore body with the intent of establishing its own mill for the treatment of its ores. (Tr. 78-79.) Mr. Porter was then retained by Northwest to make tests of the drill samples from the Northwest ore body, to prepare a flow sheet for a mill to accommodate the Northwest ore body, to prepare all specifications and mill costs, and to complete the application for submission to the AEC for a uranium concentrate contract. (Tr. 78-79; 84-85; 416, 466.)[14] Thereafter Mr. Porter worked at

[14] The Court of Claims opinion states that Mr. Porter was consulted for the purpose of upgrading the ores. (Appendix A, p. 10a.) This is inaccurate. He was employed to study and analyze the Northwest deposit and determine which of the three possible methods (see *supra*, p. 16) of dealing with the ores would be most feasible.

great length on the above projects. Subsequently he concluded that the Northwest ore body would be cheaper and easier to mill than the Dawn ore body, realizing a 90% recovery and producing at least a 70-75% uranium concentrate. (Tr. 77; 440, 503, 535-36.)

3. January 3, 1957 - July 13, 1957

Petitioner and the AEC's Grand Junction Manager Confer and Petitioner Formulates Its Proposal in Accordance With Such Conference.

On January 3, 1957, a meeting was arranged between Messrs. Wilson and Porter for Northwest and Mr. Jones for the AEC at Grand Junction. The purpose of the meeting was to discuss possible ways for Northwest to make its ore deposits available to the AEC. As previously noted, *supra* p. 16, Mr. Wilson suggested three possible ways of dealing with the ore deposit in his letter of December 14, 1955. During Mr. Porter's extensive analysis of the Northwest ores in the fall and winter of 1956, he attempted to ascertain which procedure of the three suggested would be the least expensive and most practical from a mining point of view. At the meeting on January 3, 1957, Mr. Porter advised Mr. Jones that, based upon his studies, he had determined that it would be possible to produce a product which would be competitive in price with the prices which were being paid at that time to AEC contractors by utilizing an 8 per cent "slurry" product. This process entailed treating and/or chemically upgrading the ore to produce a wet solution (slurry) in which the solids, when dried, would contain approximately 8 per cent U_3O_8. This 8 per cent slurry could then be processed through the circuits of another mill, and ultimately a concentrate containing 70 per cent U_3O_8 could be produced. Disposition of the Northwest

ores on this basis was an attractive possibility insofar as Northwest was concerned because it would eliminate one step in the milling process which would save considerable expense.[15]

During the January 3, 1957 meeting, Mr. Jones, the AEC Grand Junction Manager suggested that Messrs. Wilson and Porter contact Vitro Mining Company (located at Salt Lake, Utah) and the Dawn Mining Company to see if such a slurry product could be treated in their plants and, if so, perhaps some con-

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[15] In pursuing the possibility of producing a slurry product to be upgraded at another mill together with its program to secure its own uranium concentrate contract, Northwest was not pursuing two different courses or two different proposals. In the milling of uranium ores there are several steps involved from the introduction of uranium ores into the mill circuit until the final uranium concentrate or yellow cake is produced. The number of steps depends upon the characteristics of the ore to be processed and the chemical processes employed. Insofar as the Northwest mill was concerned, there were three steps involved in the process for producing uranium concentrate: the first step would consist primarily of a crushing operation; the second step would be putting the ore into some type of equipment and introducing solvent so that the mineral itself would be taken into solution; and the third step would be the precipitation of the minerals, thereby producing the yellow cake. The third or last step of processing, insofar as the Northwest ore was concerned, required an ion exchange unit, which is a chemical process whereby the mineral of one solution is exchanged into another solution thereby enabling one to recover particular elements that he is after. (Tr. 94-95, 105). By deleting the third or ion exchange unit from the mill plan and design, the slurry product would be the end product that would then have to be shipped to another mill for the final stage of processing into uranium concentrate. Thus, whether Northwest was discussing the production of a slurry product or the final uranium concentrate was only a question of where one would interrupt the mill circuit, if at all. It would cost an estimated $1,800,000 to construct milling facilities to produce an 8 per cent slurry; it would cost an additional $300,000 to include the ion exchange unit to produce the uranium concentrate.

tractual arrangement could be made with one of these mills to process this slurry through their plant to a final yellow cake product. (Tr. 422-23; 92; 1230.) Mr. Jones indicated that the AEC would consider such a proposal if Northwest could submit evidence to the effect that this could be done. (Tr. 428.)

Technologically there was no problem in upgrading the 8 per cent slurry into a 70% concentrate; it was a matter of working out arrangements in terms of *price* that presented the problem. This because expensive plant alterations would have to be made at Dawn to handle the slurry (principally a $100,000 ion exchange unit) and in addition Dawn had a uranium concentrate contract with the AEC and Dawn would be interested in handling a slurry product only if its contract were enlarged to accommodate the increased U_3O_8 produced through a slurry product. With respect to Vitro, their equipment would accommodate the ores, but shipment to Salt Lake City involved substantial freight costs as well as drying, drumming, and packaging. Prices quoted by Vitro and Dawn to Northwest were deemed prohibitive.

Between January and July of 1957, Mr. Porter continued to have discussions with Mr. Jones concerning the Northwest project. (Tr. 432.) On March 11, 1957, Mr. Wilson called Mr. Jones and inquired whether the contract for the concentrate (about which they spoke at the January 3, 1957, meeting) would have to be directly with Northwest, or through the mill refining the slurry. Mr. Jones told Mr. Wilson that either way was a possibility, but inasmuch as the mills had contracts, it would perhaps be simpler to handle this slurry through the contract already existing with a mill. (Tr. 95-96.)

Petitioner respectfully submits that the foregoing conclusively demonstrates that from the time of the notification by Northwest to the AEC of the initial discovery of the Northwest ore body (December 10, 1955), down to the summer of 1957, the AEC was kept fully apprised of Northwest's activities in connection with the development of the ore body and Northwest's plan to construct a uranium processing mill in the area of the ore body. Moreover it conclusively establishes that the AEC *assisted, advised and encouraged* Northwest in its program, and that it did so consistent with AEC policy and practice with respect to such matters. Further, this evidence is curiously at odds with the Court of Claims' statement in its decision that Northwest "did not engage in any substantial negotiations with the AEC until July, 1957." (Appendix A, pp. 9a-10a.)

4. July 13, 1957 - October 28, 1957

Petitioner Submits Its Proposal Tendering Its Ores and Requests Formulation of Mill Contract for Sale of Concentrate. AEC Continues To Meet and Negotiate With Petitioner Until October 22, 1957; on October 28, 1957, AEC Announces Prospective Change in Procurement Policy. Petitioner's Proposals Are Given the "Brushoff" and Are Never Considered by the AEC.

On July 13, 1957, Northwest, per Mr. Wilson, submitted by letter a formal proposal to the Grand Junction Manager, Mr. Jones. This proposal is set out in its entirety as part of Finding 55, Appendix A, pp. 64-67a. It is petitioner's position that by this proposal it tendered to the AEC 1,200,000 pounds of refined uranium concentrate. It should be pointed out that this proposal advised the Grand Junction Operations Office that it would be impractical to upgrade at Dawn or Vitro (this in answer to Mr. Jones' suggestion at the

January 3, 1957 conference) because of the price they requested.[16] The letter then proposed the inclusion in the Northwest mill of a continuous ion exchange unit which would produce uranium concentrate. The proposal also advised the AEC that Northwest was ready to discuss all phases of this proposal at the earliest possible convenience of the AEC.

At the time this proposal was submitted, Northwest, acting through Mr. Porter, had all of the necessary information available to negotiate a uranium concentrate contract.[17] (Tr. 422-43, 481; 103-07, 340.)

After submitting its proposal, petitioner's personnel doggedly pursued the AEC personnel in order to determine the status of its proposal.[18] Petitioner finally

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[16] The interpretation placed upon this proposal by the Court of Claims is erroneous. It reads the proposal as being limited to the establishment of a plant to develop the slurry. The letter plainly points out that both Dawn and Vitro had quoted prohibitive prices. The only alternative left to Northwest at that point was to go forward with its other possible alternative—a full mill process. *Compare* Appendix A, p. 11a, *with* Finding 55, Appendix A, pp. 64-67a.)

[17] Mr. Porter had compiled detailed information, tests, flowsheets, estimates and other back-up material for the proposed concentrator, although this material was not presented to the AEC until several months later. Mr. Porter was, of course, eminently well qualified on this subject since he had, in the year previous, compiled just such data in support of the Dawn Mining Company proposal.

[18] On July 23, 1957, ten days after the submission of the proposal, Mr. Wilson telephoned Mr. Jones and inquired as to what action had been taken on the Northwest proposal. Mr. Jones replied that he had not had time to study it, and that Grand Junction was not then prepared to discuss the matter.

On July 13, Mr. Wilson directed a letter to Mr. Jesse C. Johnson in Washington, D. C., advising him that Northwest had recently submitted a proposal to the AEC through Mr. Jones at Grand

arranged a conference with Mr. Jones for September 23, 1957. On that date the parties met, Messrs. Wilson Porter and Dr. Scott appearing on behalf of Northwest, with Mr. Jones appearing on behalf of the AEC. Also present was Mr. Arentz, who was a mining associate of Mr. Porter's, a financier of mining ventures, and the intended principal financier of the Northwest mill.

During this meeting Mr. Jones advised that Grand Junction had not considered the July 13, 1957 proposal and that the AEC was having problems concerning

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Junction and that Mr. Jones had suggested that Mr. Wilson meet with Messrs. Johnson and J. T. Sherman in Washington, D. C. (Jt. Ex. A, Item 14.) On July 26, 1957, Mr. Johnson acknowledged Mr. Wilson's letter of July 13th and confirmed the appointment. (Jr. Ex. A, Item 15.) Thereafter in late July Mr. Wilson met with Mr. Johnson in Washington. Mr. Jones of the Grand Junction office also attended this meeting. Mr. Wilson inquired of Mr. Johnson about the Northwest proposal of July 13, 1957, and Mr. Johnson replied that the AEC was not prepared to discuss the matter at that particular time. There was also some discussion between these parties as to the fact that the general uranium supply was increasing. (Findings 57-59, Appendix A, pp. 68-69a.)

On August 6, 1957, Mr. Wilson called Mr. Jones to inquire about the disposition of the proposal. Thereafter Mr. Wilson called Mr. Jones several times and asked for a meeting. (Tr. 942) On August 19, 1957, Mr. Wilson directed a letter to Mr. Jones wherein he referred to their conversation of August 9 and also attempted to arrange a conference with him. (Jt. Ex. A, Item 16.) Mr. Hutchinson, Assistant Manager, Grand Junction, directed a letter to Mr. Wilson (dated August 21, 1957), advising him that Mr. Jones would be at the American Mining Congress Convention during September 9 through 11 and that it might be possible to arrange for a conference in Salt Lake City with Messrs. Wilson, Porter, and Jones. (See Jt. Ex. A, Item 17.) Mr. Wilson attended the conference in Salt Lake City referred to in Mr. Hutchinson's letter but Mr. Jones did not appear there. Mr. Wilson next saw Mr. Jones at Moab, Utah, on September 14, 1957, and requested a conference, which was arranged for September 23, 1957.

change of policy due to increased supplies of uranium ore reserves.

Mr. Jones remarked, however, that Northwest's proposed price of $10.46 per pound for yellow cake was *one of the most reasonable prices ever presented.*[19] Mr. Jones informed these gentlemen that the AEC was looking to the 1962 price of $8.00 per pound for uranium concentrate. (This reference was to the guaranteed price to be paid for all uranium ores delivered in the 1962-66 period, i.e., after the expiration of Circular 5. As of the date of this meeting, Circular 5 prices were still in effect.)

Finally, Mr. Jones suggested that Northwest submit its proposal concerning a uranium concentrate and mill contract, including an analysis of all costs, and that such would be reviewed and considered by the AEC. Mr. Jones recalled that at this September 23, 1957, meeting he was advised that Northwest had the finances, mill site, ore reserves, and all other things necessary in order to negotiate a uranium concentrate contract. (Tr. 945-46.)

On October 9, 1957, Northwest submitted an even more concrete and detailed proposal than the July 13, 1957, proposal, this in response to Mr. Jones' suggestion at the September 23 meeting. In this proposal Northwest developed in minute detail its planned milling operation, including seventy-one pages of dia-

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[19] The price that Northwest had originally proposed was $10.11; sometime during the evolution of this case, however, the amount was changed by somebody (by ink over the typing—uninitialed) to read $10.46. Since the Commissioner, affirmed by the Court of Claims, found that the price proposed was $10.46, petitioners are forced to discuss this case at such price. $10.11 was, however, petitioner's proposed price.

grams, tables, schedules, summary sheets and narrative explanation of the whole proposal. (See Finding 61, Appendix A, pp. 70-73a.)

By letter dated October 22, 1957, Mr. Jones acknowledged receipt of the October 9 proposal supplementing the July 13 proposal. This letter advised petitioners that the AEC was then making a review of the future requirements for uranium concentrates; it stated, however, that the AEC "will give your proposal every consideration." (Finding 62, Appendix A, p. 62a.)

On October 28, 1957, Mr. Johnson delivered a speech announcing that limitations were being imposed upon the further expansion of concentrate purchase commitments. He noted that "it has been apparent for some time that this point was being approached."[20] However, in view of the AEC's prior activities in stimulating exploration and development, the speech contained savings language to the following effect:

> *"Proposals for domestic contracts which already have been submitted and are under review still will be considered in the light of the discussions which have taken place."* (Finding 26, Appendix A, p. 45a.) (Emphasis added.)

Neither the July 13, 1957, proposal nor the October 9, 1957, proposal which supplemented the July 13 proposal was ever acted upon by the Commission and no notice of any kind was ever communicated to North-

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[20] The October 28, 1957, announcement was the first announcement that the AEC was no longer continuing to buy unlimited quantities of uranium and the first announcement to the industry of the policy change. See Hearings before the Joint Committee on Atomic Energy, 85th Cong., 2nd Sess. 24-25 (1958) (P. Ex. 62, pp. 4-5).

west as to any action taken in regard to their proposals, nor was any criticism ever made of the proposals, nor was additional information ever requested by the AEC. (Tr. 119-20, 390-91, 443, 534, 713, 966, 1106-08, 1211, 1501.)

REASONS FOR GRANTING THE WRIT

This case is important to all individuals or business organizations that attempt to enter into contracts with an agency of the Federal Government. As it stands, the decision sanctions business practices on the part of the Government which fall far short of the normally expected ethical and moral standards requisite for an orderly functioning of commercial affairs. The case raises important questions with respect to the interpretation and administration of Government contract practices, and as such, it requires the supervision of this Court to assure that the contract practices engaged in by the agencies of the Federal Government do not fall below the normal standards of fair dealing obtaining in the business community. See *United States* v. *Utah Construction Co.*, 34 Law Week 4440 (June 6, 1966); *United States* v. *Blair*, 321 U.S. 730 (1943).

This case also provides this Court with a seldom seen opportunity to review basic general principles of contract law, both as they apply to federal and general contract law. This case presents issues of implied in fact contract, offer and acceptance, and the doctrine of promissory estoppel. It is not stretching a point to state that, although the principles obtaining in regard to these subjects are ancient in the law of contracts, the case itself presents these issues in a unique and novel way. Moreover the Court of Claims has interpreted the doctrine of promissory estoppel under the

Restatement of Contracts, § 90, Tent. Draft No. 2 (April 30, 1965), in a niggardly and illiberal manner. This Court is here presented with an opportunity to promulgate its views as to this important doctrine in the law of contracts at a uniquely appropriate time because by construing such doctrine as it applies to this case, the Court can give direction and guidance to the drafters of the Restatement at a point in time *before* their tentative views become fixed and entrenched.

Finally, the issues here presented are of unique importance because of the exclusive jurisdiction of the Court of Claims over such contract suits, since it is only through the exercise of this Court's jurisdiction that the Court of Claims will receive appropriate supervision in its determination and resolution of these contract questions. Exercise of this jurisdiction would be especially appropriate in this case in view of the fact that many of the conclusions of the Court of Claims are "clearly erroneous" and the further fact that its decision here is in direct conflict with two recent cases decided by the Court of Claims.

1. Contract Implied in Fact

Two propositions must be established at the outset of this discussion. The first is that "neither the enabling legislation nor any AEC regulations prescribe formalities as to the terms or type of contracts necessary to establish valid and enforceable obligations in the conduct of the atomic energy program." (Finding 5, Appendix A, p. 22a) The AEC did, however, through administrative practice and custom establish an informal procedure for entering into and negotiating non-cancellable uranium concentrate contracts. The second proposition is best stated in the form of

a question: What type of return consideration did the AEC expect from individuals or corporations who attempted to supply that which the AEC was seeking? It is apparent that the AEC was seeking *performance* on the part of the prospectors and developers; a return *promise* from an individual or corporation made at the outset of his or its activities would have been worthless to the AEC and certainly would not have created any legal relation. The question for resolution here becomes, at what point in time did the *performance* ripen into a contractual relation wherein both of the parties were bound? In answering this question, we must be mindful that "transactions of this kind must be interpreted with common sense and in accordance with the actual usages of men." Corbin, *Contracts,* Sec. 70. In order to finally answer this question in this case, it is necessary to analyze the constituent parts of the non-cancellable uranium contract either contemplated or concluded between the parties here.

While the respondent's original offer apparently contemplated a unilateral contract, i.e., a promise for a fulfilled act,

> "we know . . . that there are many situations in which the outline of the transaction appears unilateral but a return promise can fairly be implied from all the circumstances. That unstated return promise can often be seen in a document, an act, or a course of conduct." *The Padbloc Company, Inc.* v. *United States,* 161 Ct. Cl. 356 (1963).

The difference between an express contract and a contract implied in fact is really a "difference in the mode of proof." Corbin, *Contracts,* Sec. 18. These terms do not denote different kinds of contracts. *Skelly* v.

Bristol Savings Bk., 26 A. 474, 63 Conn. 95 (1893). Moreover, the Government has given its consent to be sued upon any contract, express or implied. Tucker Act of March 3, 1887, as amended, 62 Stat. 940, 28 U.S.C. § 1491 (1964 ed.). See McBride & Wachtel, *Government Contracts,* Sec. 17.10. It is petitioner's position that a bilateral implied in fact non-cancellable contract arose between the parties here, and that this contract must be implied from the overall activities of the petitioner and respondent, particularly from the fact of the respondent's continuing offer and petitioner's tender of its ore deposits and concentrates in its July 13, 1957, and October 9, 1957, proposals. Petitioner submits that by the tender of the ores and concentrates, it formally and finally accepted the continuing offer of the respondent, and that respondent was thereby bound to formalize a non-cancellable contract with the petitioner. Alternatively it is petitioner's position that an offer for a unilateral contract was made by the respondent and that petitioner, through its substantial *performance,* bound the respondent to its offer (promise), so that respondent was bound to complete negotiations necessary to finalize the contract. As a conjunctive to this alternative argument, it is petitioner's position that the offer of the respondent was made *irrevocable* by the *substantial performance* of petitioner, and that respondent was bound at the very least to enter into finalizing negotiations in order to ascertain if petitioner had in fact complied with the terms of the offer. Finally, if none of the above arguments are accepted, it is petitioner's position that the Government should be *estopped* under Section 90 of the Restatement to deny the existence of a contract because of the injustice it would cause to the petitioner.

a.) *The Government's continuing offer:* There can be no question about the fact that through Circulars 1 and 5 and the May 24, 1956 policy announcement, the Government made a continuing offer to the public to purchase uranium ores and concentrates from anyone who could put himself into a position to supply such materials. The Court of Claims decision in *Radium Mines, Inc.* v. *United States,* 139 Ct. Cl. 144, 153 F. Supp. 403 (1957) conclusively establishes this point. There the Court held that Circular 1 constituted just such a continuing offer; by a parity of reasoning, Circular 5, as supplemented by the May 24, 1956, announcement must also be construed to constitute a continuing offer to contract. The Court of Claims in its decision held that petitioner's position in the present case is "shakier" than that of the petitioner in *Radium Mines.* (Appendix A, p. 15a.) The Court went on to say that "we do not need to state precisely what the AEC's offer might have been. It is enough to say that it was not sufficiently broad to have ripened into the contract plaintiffs' assert here." *Id.* at 15a. In this the Court erred.[21] It did in fact need "to state precisely what the AEC's offer might have been," (i.e., what it was) because without such an analysis on the part of the court, the question remains undecided. Petitioner submits that Part II of

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[21] The court's analysis of the *Radium Mines* case typifies its imprecise thinking in this case. The court's slip opinion, p. 12 states that the Regulation involved in *Radium Mines* was Circular 5. It is clear from even a cursory reading of the *Radium Mines* case that the words "Circular 5" do not even appear in the opinion. *Radium Mines* was a Circular 1 case; the court's error, though demonstrative of a negligent approach to this case, is understandable since, as petitioner argues, the analysis of the circulars is interchangeable with respect to the principle of continuing offer.

the Statement of the Case clearly demonstrates that respondent was making a continuing offer and will rest its argument upon the information therein developed, trusting that this Court will come to grips with the issue in a more meaningful manner than did the Court of Claims.

b.) *Petitioner accepted the Government's continuing offer:* The Court of Claims clearly held in the *Radium Mines* case that a contract come into existence when the producer accepts the Government's offer by "putting himself in a position to supply the ore described in the circular." 153 F. Supp. at 405. Petitioner did everything within its power to place itself in such a position; petitioner did everything required by the AEC. Yet the AEC refused to formalize a contract either for ores or concentrate without ascribing any reasons for its refusal. The Court of Claims attempted to overcome this arbitrary and capricious conduct on the part of the agency by faulting petitioner for never making any deliveries to the AEC, and for failing to mine its ore. The Court's analysis demonstrates a clear misunderstanding as to policy and practice in this field. Petitioner could not have proceeded to mine its ore or deliver its concentrate to the AEC without first obtaining licenses from the Commission to carry on such activities. It seems indeed a curious result to find that petitioner failed to accept the respondent's offer when petitioner was unable to do that which it is faulted for not doing without prior approval of the respondent itself.

Moreover, the result reached in this case is directly contrary to that reached in another recent court of Claims case, *Himfar* v. *United States,* 355 F. 2d 606 (1966). The court in *Himfar* was construing a

regulation closely analogous to that under consideration in the present case, which regulation bound the Government to pay guaranteed prices for a specified period of time for manganese ores and concentrates. The plaintiff therein had obtained a certificate from the GSA entitling him to participate in the program. He began his mining operations and sold a number of tons to the defendant. Subsequently his certificate was suspended. In holding that such was arbitrary agency action, and that a binding implied in fact contract existed, the court analyzed the relation existing bewteen the parties and the activities which the plaintiff had undertaken in reliance on the defendant's promise. The court stated:

> "In this case, as in *Radium Mines,* the Government's purpose was to induce persons to find and mine a wanted mineral, and this purpose was to be achieved by the payment of a guaranteed uniform price . . . the Government's language in its manganese regulation *reasonably induced significant action by plaintiff in reliance upon the promise to receive and pay for the ore.* At least in the case of a producer (like plaintiff) who expended efforts to find and obtain ore in response to the regulation—and who had been granted the required certificate—there arose an obligation on the part of the defendant to receive and pay for minerals falling within the requirements of the regulation. *The consideration for this obligation was the plaintiff's finding of manganese and his efforts to produce it.* There was, in a word, an obligation and a promise by the defendant to allow the plaintiff to find, ship and receive payment for such ore." 355 F. 2d at 610. (Emphasis added.)

The only difference between the instant case and the *Himfar* case is that there the plaintiff received a certificate which allowed him to ship his ores to the

defendant therein for purchase. Petitioner here, like the plaintiff in *Himfar,* expended time and money in reliance upon the Government's promise to purchase ores and concentrates. The court should have found, as in *Himfar,* that an implied in fact contract did in fact come into existence between the parties.

2. A Unilateral Contract Was Formed Both as to the Ores and the Concentrate

As noted, petitioner did everything it could to perform its part of the contract. The court held, however, that petitioner's actions fell short of "significant action" as considered in *Himfar.* The court went on to make the following statement:

> "We appreciate that the AEC was the sole market for uranium and that no reasonable businessman would proceed beyond the development stage until he could be sure he could sell the product to the AEC on a profitable basis. *It would simply have been impossible for Northwest to have done much more than it did;* but what it did was not enough and we say this with full knowledge that Northwest no doubt reasonably relied on the AEC's general policy of buying almost all available uranium products." (Emphasis added.)

This makes it abundantly clear that petitioner *performed fully* that which was requested under the AEC's continuing offer. This performance on the part of petitioner is clearly sufficient under the Restatement to constitute consideration to bind the respondent to the contract induced by its offer. Compare §§ 45, 52, comment *b* and comment *b* to Section 31, Restatement, Contracts, Tentative Draft No. 1, (April 30 1964).

Moreover, the opinion of the Court of Claims fails to differentiate between a contract to purchase *ores* and a contract to purchase *concentrates.* Even assuming that petitioner did not perform sufficiently to accept respondent's continuing offer to contract to purchase concentrate—something which petitioner certainly does not concede—the further question of whether petitioner performed sufficiently to conclude a contract to purchase its *ores* remains. Certainly by the time that petitioner had drilled, proved and tendered its ores (i.e., by July 13, 1957), it had performed sufficiently to bind respondent to purchase its *ores.* There can be no denying that these ores were of the type desired and requested by the AEC because, after petitioner was dissolved, the AEC in fact purchased the uranium refined from these ores from the Dawn Mining Company, which had itself purchased the ores in question from petitioner's successor.

Even if this analysis is not accepted, at the very minimum petitioner's performance caused the AEC's continuing offer to become *irrevocable* as to petitioner, binding the AEC to at least consider and reply to petitioner's proposals. Corbin, *Contracts,* Sec. 207. If there were in fact something wrong with petitioner's proposals, certainly the AEC, at the absolute rock-bottom minimum, had a duty to meet with petitioner and declare whether it desired to formalize a contract and if not, why not. Petitioner was never accorded such an opportunity—it never even received notification one way or the other by correspondence.

In an *ex post facto* attempt to cure the defects in the AEC's conduct, the Court of Claims held that petitioner did not accept the respondent's offer and in making this determination, the court looked to

> "the problem of price, the low grade of the ore and the complexity of the proposal for upgrading it in the concentrator plant, the short life period of the stated reserves . . . and the fact that Northwest proposed to process only its ores contrary to general AEC policy . . ." (Appendix A, pp. 16-17a)

It would unduly extend an already overly lengthy petition for petitioner to make specific rebuttal on each of these points. Petitioner respectfully, submits, however, that not one of the factors looked to by the court would have impeded the finalization of a contract between the parties, had the AEC treated petitioner fairly by meeting to negotiate out these subjects. It was the AEC's failure to make good on its bargain which prevented petitioner from demonstrating that these purported "looked to" problems were not in fact problems at all. Certainly given the amount of reliance the AEC's actions resonably induced from petitioner, it was agency action of the most arbitrary and capricious kind for the Commission to fail and refuse to meet with petitioner on the proposals. This is especially so when one considers the October 28, 1957, revocation notice. This notice contained a savings clause to the effect that "proposals for domestic contracts which already have been submitted and are under review still will be considered in the light of discussions which have taken place." (Finding 26, Appendix A, pp. 44-46a) How could petitioner possibly be excluded from this class?

3. Promissory Estoppel

The basic reason why the Court of Claims refused to invoke this emerging doctrine in contract law was because it did not believe that petitioner had been done an "injustice," which requirement it characterized as

the "ultimate test" controlling application of Section 90. The question of "injustice" is essentially a subjective judgment which any Court must make in deciding whether to apply the doctrine (Boyer, *Promissory Estoppel: Requirements and Limitations of the Doctrine*, 98 U. Pa. L. Rev. 459, 484), and there is little petitioner can add to the foregoing development by way of argument to demonstrate to this Court that the injustice which the Court of Claims refused to find does in fact exist in a very real way.

Petitioner respectfully submits, however, that the Court of Claims approach is not in conformity with the proposed Restatement, and in fact harkens back to the preexisting standard, if it in fact meets the old Section 90 test. The primary difference between the old Section 90 and the new is seen from a comparison of the opening sentences of each. Under the old Section 90,

> "a promise which the promisor should reasonably expect to induce action or forbearance of *a definite and substantial character* on the part of the promisee and which does induce such action or forbearance is binding if injustice can be avoided only by enforcement of the promise." (Emphasis added.)

Under Section 90 of the Proposed Restatement, Second,

> "A promise which the promisor should reasonably expect to induce action or forbearance on the part of the promisee . . ."

The Reporter's Note points out that the principal change from the original Restatement is the recognition of the possibility of partial enforcement. The re-

quirement that the action or forbearance have "a definite and substantial character" is deleted. But the Court of Claims refused in this case even to recognize the necessity for partial enforcement. It simply cannot be denied that petitioner's actions here in response to respondent's promise were of a "definite and substantial character." And yet the Court of Claims refused to apply Section 90. Again, petitioner can only rely upon this Court to come to grips with this issue in a more realistic and fair manner than did the Court of Claims.

A citizen should not be required to deal with his Government at his peril. This is especially true where, as here, petitioner was dealing with top-echelon administrative personnel[22] whose actions would naturally inspired considerable confidence and reliance. A citizen should be able to rely upon the representations made by the administrative agencies of his Government in the same manner that he would be able to rely upon the integrity and honesty of another member of the business community. Were a private individual to carry on his contractual operations in the manner of the AEC here, he would not have to worry about future operations—no one would deal with him. Should the Government and its agencies be held to a lesser standard of business ethics than the business community at large?

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[22] The record in this case indisputably establishes that Mr. Johnson, Director, Division of Raw Materials, AEC, and Mr. Jones, Manager, Grand Junction Operations Office, AEC, were authorized to negotiate and execute contracts for the purchase by the AEC of uranium ores and uranium concentrates, and that Mr. Jones had authority to delegate the authority to execute contracts. (See Pl. Ex. 54A, 54B, 54C; Tr. 1000.)

CONCLUSION

WHEREFORE petitioner respectfully prays that a writ of certiorari should issue.

Respectfully submitted,

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APPENDIX

APPENDIX

IN THE UNITED STATES COURT OF CLAIMS

No. 404-59

(Decided February 18, 1966)

JACK D. GAY, TRUSTEE FOR SHAREHOLDERS OF NORTHWEST URANIUM MINES, INC., ET AL.

v.

THE UNITED STATES

Richard D. Sanders for plaintiffs; *James E. Scott,* attorney of record.

Edwin J. Reis, with whom was *Assistant Attorney General John W. Douglas,* for defendant.

Before COWEN, *Chief Judge,* LARAMORE, DURFEE, DAVIS and COLLINS, *Judges.*

Opinion

LARAMORE, *Judge,* delivered the opinion of the court:

Plaintiffs ask for lost profits totaling $5,000,000 which is their alleged damage cause by the defendant's failure to enter into a contract to purchase their uranium ore or concentrate.[1] They claim that the defendant's greatly publi-

[1] The style of this case is "Jack D. Gay, Trustee for Shareholders of Northwest Uranium Mines, Inc., a corporation in liquidation, Northwest Uranium Mines, Inc., a corporation in liquidation, Silver Buckle Mining Company, a corporation, [and] Idaho First National Bank Building, Wallace, Idaho, Plaintiffs." Northwest

cized program to stimulate domestic uranium discovery and production constituted an offer which they accepted, or in the alternative, that they made an offer which the government accepted but refused to formalize. We hold that there was no contract, either unilateral or bilateral, and accordingly give judgment for the defendant.

The record in this case is voluminous. A thorough reading of the plaintiffs' exceptions and briefs alone is enough to exhaust the heartiest. Regrettably, the parties have not helped us by providing a summary of the facts and arguments. It is our particular good fortune to have an extremely thorough and ably presented "Findings of Fact" from our commissioner. We have made a number of minor changes in the findings to satisfy some of plaintiffs' exceptions. None of the changes has any effect on the outcome, however.

The history of Atomic Energy Commission (AEC) policy regarding uranium procurement is important to plaintiffs' legal theory. We note that one of the stated purposes of the Atomic Energy Act of 1946, 60 Stat. 755, as amended, 42 U.S.C. § 1801-1819 (1946 Ed.) was to assure the development of a domestic uranium industry which had been theretofore nonexistent. To this end, the AEC was granted very broad powers to purchase uranium source materials. 42 U.S.C. § 1805(b)(5) (1946 Ed.). One of these powers was to establish "guaranteed prices for all source materials *delivered to it* within a specified time." (Emphasis added.)

Uranium Mines, Inc. (Northwest) and Silver Buckle Mining Company (Silver Buckle) are Idaho corporations, each having its principal place of business in Wallace, Idaho. On May 10, 1958, the shareholders of Northwest voted to liquidate, and Jack D. Gay was appointed by the District Court of the State of Idaho to serve as trustee for the shareholders. Although the present claim is based on the activities of Northwest, Silver Buckle is an interested party because it acquired certain leases from Northwest and took over the operation of the ore body, promising to divide any profits in agreed proportions.

In published regulations entitled "Domestic Uranium Program Circulars," the AEC established minimum prices for certain categories of uranium ores and concentrates. Thus, on August 11, 1948 in Circular No. 1, the AEC provided for a "ten year guaranteed minimum price" for high-grade uranium-bearing ores and mechanical concentrates *delivered to the Commission* in specified quantities. 10 C.F.R. § 60.1 (1949 Ed.). On the same day, the AEC announced in Circular No. 5 a guaranteed minimum price for "uranium-bearing carnotite-type or roscoelite-type ores [low-grade ores] of the Colorado Plateau area" *delivered* in certain quantities to the AEC depot at Monticello, Utah.[2] 10 C.F.R.

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[2] Circular No. 5, Revised, provides in pertinent part:

"§ 60.5 *Guaranteed minimum price for uranium-bearing carnotite-type or roscoelite-type ores of the Colorado Plateau area*—(a) *Guarantee.* To stimulate domestic production of uranium-bearing ores of the Colorado Plateau area, commonly known as carnotite-type or roscoelite-type ores, and in the interest of the common defense and security, the United States Atomic Energy Commission hereby establishes the guaranteed minimum prices specified in § 60.5a effective during the period, March 1, 1951, through March 31, 1962, for the delivery of such ores to the Commission at Monticello, Utah, in accordance with the terms of this section and § 60.5a.

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"(d) *Deliveries of not to exceed 1,000 tons per year.* To aid small producers, any one seller may deliver without a written contract but otherwise in accordance with this section up to, but not exceeding 1,000 short tons (2,000 pounds per ton) of ores during any calendar year.

"(e) *Deliveries in excess of 1,000 tons per year.* Sellers desiring to deliver in excess of 1,000 short tons (2,000 pounds per ton) of ores during any calendar year will be required to enter into a contract with the Commission providing for, among other things, a rate of delivery and the total quantity of ore to be delivered.

"(f) *Delivery.* Seller, at his own expense, shall deliver and unload all ores at the buyer's depot at Monticello, Utah. Deliveries shall be in lots of not less than 10 short tons (2,000 pounds per ton) unless special arrangements have been agreed upon by buyer,

but such lots may be delivered in more than one load. Days and hours during which ore may be delivered will be posted at the depot.

* * * * * *

"(k) *Limitation of commitment.* Commitments by the Commission to accept delivery of ores are limited to the provisions of this section and § 60.5a as amended from time to time, or to written contracts between the Commission and sellers. Other commitments purporting to be made by the Commission's field personnel or other agents of the Commission will not bind the Commission unless they are in accord with the provisions of this section and § 60.5a or other official circulars.

"§ 60.5a. *Schedule I: minimum prices, specifications, and conditions*—(a) *Prices.* Payment for delivery of the ores will be computed on the following basis:

"(1) *Uranium.* (i) Ores assaying less than 0.10 percent: no payment. Any such ores which are delivered to the purchase depot shall, unless otherwise specifically agreed to by buyer, become the property of the buyer as liquidated damages for buyer's expense of weighing, sampling, and assaying, and after sampling may be placed in process, commingled, or otherwise disposed of by buyer. If seller has any question as to the quality of his ore, it is suggested that before shipment and delivery to the purchase depot a representative sample be submitted to the buyer or to one of the umpires for assay at seller's expense. The buyer at its discretion may assay a limited number of samples without charge.

"(ii) Ores assaying 0.10 percent U_3O_8 and more, as follows

U_3O_8 assay:	Payment per pound U_3O_8
0.10 percent	$1.50
0.11 percent	1.70
0.12 percent	1.90
0.13 percent	2.10
0.14 percent	2.30
0.15 percent	2.50
0.16 percent	2.70
0.17 percent	2.90
0.18 percent	3.10
0.19 percent	3.30
0.20 percent and more	3.50

"(iii) Premiums on uranium: $0.75 per pound for each pound of U_3O_8 in excess of 4 pounds U_3O_8 per short ton (2,000 pounds per ton) of ore and an additional premium of $0.25 per pound for each pound in excess of ten pounds U_3O_8 per short ton. Fractional parts of a pound will be paid for on a pro rata basis to the nearest cent.

* * * * *

"(3) *Allowances.* (i) A development allowance of $0.50 per pound U_3O_8 in ores assaying 0.10 percent U_3O_8 or more in recognition of expenditures incurred or likely to be incurred in the development or exploration necessary for maintaining and increasing developed reserves of uranium ores. Fractional parts of a pound will be paid for on a pro rata basis to the nearest cent.

"(ii) A haulage allowance of 6 cents per ton mile for transportation of ore paid for under § 60.5 and this section from the mine were produced to the purchase depot specified by the Commission, up to a maximum of 100 miles. The haulage distance from the mine to the purchase depot will be determined by the Commission and its decision will be final. Tonnages for purposes of this allowance shall be calculated on the basis of natural weights rather than dry weights.

* * * * *

"(b) *Quality and size.* Ores will not be accepted by buyer under §§ 60.5 and 60.5a which, in buyer's judgment:

"(1) Contain less than 0.10 percent U_3O_8;

* * * * *

"(3) Contain impurities deleterious to buyer's extraction process or for any other reason are not amenable to it;—

* * * * *

"NOTE: The Commission will be interested in discussing arrangements for delivery to it of types of uranium-bearing materials other than those for which guaranteed prices have been established, such as tailings, mill products, and ores of types not acceptable under §§ 60.5 and 60.5a."

§§ 60.5, 60.5a (1958 Supp.). The substance of Circular No. 5 was repeated on May 24, 1956 when the AEC announced an extension of the procurement program.[3]

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[3] The May 24, 1956 announcement provided as follows:

"The U.S. Atomic Energy Commission today announced establishment of a new domestic uranium procurement program for the period from April 1, 1962 through December 31, 1966, and an extension of the initial production bonus for uranium ore from February 28, 1957, its present expiration date, through March 31, 1960.

"The new domestic procurement program provides a guaranteed market for all uranium concentrates produced by domestic mills from domestic ores, subject to a limitation, at the Commission's option, of 500 tons of U_3O_8 per year from any one mining property or mining operation and to compliance with Commission specifications. The price established is $8.00 per pound of U_3O_8 contained in normal mill concentrates or precipitates.

"This action was taken in recognition of the need for a continuing Government market in order to maintain a high rate of exploration and development. Although domestic uranium production has shown a remarkable expansion, known ore reserves will be greatly depleted by 1962 unless extended by agressive development and exploration. A high rate of discovery is essential if substantial production is to be maintained after that date. The new domestic uranium procurement program provides assurance of a government market for an additional period of almost five years beyond March 31, 1962. This assurance will assist uranium mining and milling firms in planning future operations.

"The present uranium ore procurement program will remain in effect until March 31, 1962. The new program establishes a base price for domestic uranium concentrates, rather than ores, for the period from April 1, 1962, through December 31, 1966. The base price will be $8.00 per pound of U_3O_8 contained in concentrates meeting specifications. This price will be applicable to the type of concentrate, i.e., high grade chemical precipitates, which is being purchased presently under negotiated unit price contracts with milling companies.

"The $8.00 price was determined on the basis of a study of

In addition to encouraging discovery of uranium reserves by guaranteeing minimum prices, the AEC offered bonuses which operated primarily as an incentive for small producers. For example, Circular No. 2 provided for a $10,000 bonus to producers of ore or concentrates meeting certain conditions. 10 C.F.R. § 60.2 (1949 Ed.). Circular No. 6 provided for another bonus computed on a sliding scale to accord with the grade of ore. 10 C.F.R. § 60.6 (1958 Supp.). AEC officials made many statements of varying degrees of formality about the purposes of the domestic uranium program and its implementation. Industry officials, and even the general public to a lesser degree, were naturally very aware of the government's intention to encourage prospecting on a broad scale. The testimony and exhibits are replete with speeches, convention and congressional hearing transcripts, press releases and the like, showing that prior to 1957 the government was conducting a very aggressive uranium development program. It is no exaggeration to say that in this period of uranium "fever," when speculation in uranium shares was rampant and even children could

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existing contracts, known sources of supply and estimated costs of production.

* * * * * *

"Uranium concentrate producers desiring to sell to the Commission will be required to enter into contracts specifying the period of delivery, the quantity to be delivered, the rate of delivery, the place of delivery, the type of packaging and other standard provisions of commercial-type contracts. The contracts may cover the period April 1, 1962, through December 31, 1966, or a shorter period. The Commission, at its option, may limit the purchase of concentrates derived from any one mining property or mining operation to 500 tons of U_3O_8 per year. Depending upon requirements additional quantities may be purchased. Such purchases of additional quantities may be at prices lower than $8.00.

* * * * * *

"Pertinent details of the new program will be published at a later date."

purchase "junior" Geiger counters, it was widely assumed that the government stood ready to buy all the uranimum anyone could find. It was in this atmosphere that the plaintiffs began their exploration activities in the summer of 1955.

For narrative purposes, we are primarily interested in the activities of Northwest Uranium Mines, Inc. (Northwest) which is represented here by its trustee in liquidation.[4] Northwest became an active corporation in May of 1955 when its shareholders contributed about $100,000 operating capital. This really understates the capitalization because the principal shareholders were other mining companies and individuals engaged in the mining business who stood ready to contribute more capital and free services, the latter being particularly important to a prospecting venture. With its capital, Northwest purchased a small airplane and retained a pilot to conduct an airborne reconnaissance program in an area near Spokane, Washington. With a scintillometer, Northwest personnel detected a number of radiation "anomalities" indicating the existence of uranium-bearing ores. Follow-up ground examination proved that only one of the anomalies had potential for development. This was located on the Spokane Indian Reservation near the Midnight Mine, owned by the Dawn Mining Company.

In October 1955, Northwest procured prospecting permits by assignment from two Spokane Indians, and immediately used a bulldozer to strip overburden to expose the uranium-bearing rock formations for examination. In addition, Northwest was able to drill for samples before the December snows. About this time, Northwest's vice president and general manager visited the Defense Minerals Exploration Administration (DMEA) office at Spokane to discuss the possibility of an exploration loan. Here begins the story of Northwest's dealings with defendant.

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[4] See n. 1, *supra*.

During late 1955, it was Northwest's intention to develop its property and sell the ore in such a way that it could preserve its depletion allowance for Federal income tax purposes. To this end, it sent a letter on December 10, 1955 to the manager of the AEC's office at Grand Junction, Colorado. This was the office charged with administering AEC uranium procurement. The substance of this letter was that Northwest was interested in a contract providing that the AEC purchase concentrate from Northwest ore treated by a milling company on a toll basis. The letter posed the following question:

> *Can we enter into negotiations* with the Atomic Energy Commission to sell to you a concentrate from our ore that is treated by some other mill on a toll basis. Another phase of this question might be, *can we enter into a contract* whereby we have our ore treated on a toll basis then sell the concentrate to the milling firm. [Emphasis added.]

The AEC replied on December 14 that depletion was an Internal Revenue matter, outside AEC jurisdiction. Regarding a contract to purchase uranium concentrate, the letter responded to Northwest's inquiries as follows:

> If you are interested in the possibility of constructing a mill to process ores produced in the Spokane area, the procedure followed by the Commission is to consider detailed proposals submitted by private companies for the construction and operation of a plant and the sale to the Commission of uranium concentrates produced. Concentrates meeting required specifications are purchased by the Commission at unit prices under the terms of negotiated contracts.

The letter emphasized that particular attention should be focused on developing an adequate ore supply to assure economic operation of the mill throughout its useful life. Northwest did not reply to this letter, nor did it engage in

any substantial negotiations with the AEC until July 1957. During this hiatus, Northwest was engaged in a drilling and assaying program to establish its ore reserves.

Financing for exploratory operations was arranged with the DMEA on June 15, 1956 in an exploration contract providing for a $29,160 loan. By November 1956, the drilling program was substantially completed, and in January 1957, the AEC Spokane office engineer estimated Northwest's uranium ore deposits on a .06 percent "cutoff" (ores below cutoff cannot be economically processed) at 616,009.75 tons of ore averaging .116 percent U_3O_8 (uranium oxide). This was somewhat lower than Northwest's estimates, allegedly based on more drillings and showing 683,660.48 tons of ore containing 1,578,244.33 pounds of U_3O_8.

With reserves satisfactorily established by late 1956, Northwest again began to consider the most desirable way to sell its ore. Its first thought was to investigate the possibility of constructing facilities to chemically upgrade the ore to a concentrate which could be processed in an existing mill for ultimate sale to the AEC. Northwest was encouraged to pursue this route because in August 1956 the AEC and Dawn Mining contracted for the construction and operation by Dawn of a new processing mill. This contract contained the usual provision that Dawn must make available 25 percent of the mill's total capacity (400 tons of uranium-bearing ore per day) to "custom" ores of independent producers. The Northwest ores, if upgraded, would qualify. Thus, in August or September of 1956, Northwest consulted the designer of the Dawn mill to determine the feasibility of an upgrading scheme. He determined that the ore could be mixed with chemicals to produce a wet solution which, after a drying process, would yield a slurry containing 8 percent U_3O_8. This slurry could be put through the circuits of a custom mill to produce a concentrate containing 70 percent U_3O_8. Armed with this information, Northwest arranged a conference on January 3, 1957 with

the AEC Grand Junction manager. Northwest knew the AEC was not interested in buying the slurry. The purpose of the conference was to explore the possibility of selling the slurry to existing mills holding concentrate contracts with the AEC. The Grand Junction manager reiterated AEC policy, and counseled Northwest to negotiate the matter with the mills.

Northwest thereafter contacted the Vitro Uranium Company, a custom producer in Salt Lake City, Utah, in addition to Dawn. After extensive research on mill facilities and transportation difficulties, both Dawn and Vitro informed Northwest that they could not pay prices acceptable to Northwest for ore or slurry. Vitro said it might be interested if the AEC would amend the provisions of an existing concentrate contract; Dawn indicated that it would have to alter its facilities, which would likewise necessitate amending an existing AEC contract. In a letter on July 13, 1957, Northwest explained these difficulties to the AEC Grand Junction manager. It proposed a contract for the installation of a uranium concentrator plant to produce the 8 percent slurry which would be processed further. Because Dawn and Vitro could not process the slurry on an economic basis, Northwest suggested that any contract provide, in addition, for Northwest's installation of a continuous ion exchange unit (which could produce a 70 percent U_3O_8 product acceptable for AEC use without further processing) or an ammonia precipitating process (which would produce a 15 percent U_3O_8 product acceptable for AEC use if blended with other concentrates). Northwest readily acknowledged that it proposal was unusual:

> The contemplated concentrator does not follow the usual uranium plant design in that we will produce a low grade concentrate assaying approximately 8% U_3O_8 from ore assaying 0.124% U_3O_8, and it is anticipated that the product will be processed further in an existing mill.

It also made it clear that it contemplated a relatively short use period for the concentrator plant:

> This one reserve [about 600,000 tons] allows for at lease a four year operation at this daily tonnage rate [400 tons].

And it specified as an additional provision that it intended to process *only* captive ore: "the flow sheet as developed will not accommodate custom ore."

Between July 13 and October 9, 1957, Northwest's vice president and general manager doggedly pursued AEC procurement officials. In a series of phone calls and visits, the AEC officials put Northwest off with statements to the effect that they had not been able to review the July 13 proposal. They told Northwest that the reason for their hesitancy was that they were reviewing the AEC's procurement policy in the light of the increased supply of proven uranium ore reserves. By late 1956, total uranium reserves had risen to more than 60,000,000 tons primarily due to the discovery of about 30,000,000 tons in the Ambrosia Lake area near Grants, New Mexico. The AEC Grand Junction manager did say, however, that the proposed price for the Northwest ore was one of the most reasonable he had seen, and he suggested that he would review a detailed proposal for a uranium concentrator and mill that included a cost analysis. This Northwest submitted on October 9, 1957.

Although the detailed proposal was quite comprehensive, the AEC could not have "formalized" it into a contract without extensive investigation by its experts and negotiations between Northwest and AEC officials. The proposal never received this kind of consideration, however, because the Commission was then reviewing its requirements for future purchases of uranium concentrates. Northwest was informed to this effect on October 22, 1957. Less than a week later, on October 28, 1957, the AEC Director of Raw Materials announced in a speech that the Commission would

thereafter follow a new procurement policy. Relevant to Northwest's ambitions was the following language:

> * * * we have arrived at the point where it no longer is in the interest of the Government to expand production of uranium concentrate. It has been apparent for some time that this point was being approached. * * * Since the beginning of this year, the possibilities of additional major increases in domestic uranium production have become apparent.
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> * * * * *
>
> Under these circumstances the Commission, at this time, is faced with limiting commitments for additional domestic uranium production. Proposals for domestic contracts which already have been submitted and are under review still will be considered in the light of the discussions which have taken place. In some instances these discussions were initiated a year or more ago.

It is reasonable to assume that it was because of this announced policy change that no further consideration was given to Northwest's proposal nor was Northwest invited to negotiate. It is also reasonable to assume that the AEC felt that the previous discussions with Northwest were too tentative to warrant further consideration "in the light of the discussions with have taken place." After October 28, the Commission in fact rescinded the authority of its procurement officials to negotiate any new contracts which had not been approved in substance before the announced policy change.

Plaintiffs urge that these facts make out a good cause of action for the recovery of the profits they would have made had the defendant purchased their uranium product. Their first argument is that an "implied in fact" contract came into being by their acceptance of the AEC's continuing offer to purchase "all economically and metallurgically amenable uranium ores irrespective of the type of ore in-

volved or its geographical location." They find an offer in the whole AEC procurement program. More particularly, plaintiffs look at Circular No. 5 and the May 24, 1956 announcement, and add to them administrative practice, public addresses, press releases, and customs. The total of all these ingredients constitutes the extremely broad "continuing offer." This, they assert they accepted by means of specific contract proposals first on July 13, 1957, and again on October 9, 1957, upon their "tender" of the Northwest ore body to the Commission. Their theory, of course, dates acceptance before AEC revocation, which they contend took place on October 28, 1957; alternatively, they say that the offer was never revoked as to them because the October 28 announcement provided that "proposals for domestic contracts which have already been submitted and are under review still will be considered in the light of discussions which have taken place."

Addressing ourselves to the problem of "offer," we are not persuaded that all of the ingredients plaintiffs add together to make up a "continuing offer" can constitute an offer. It seems to us that plaintiffs are attempting to make the whole equal to a good measure more than the sum of its parts. Although we fully recognize that prior to October 28, 1957 the AEC appeared to be eager to stimulate uranium discovery and production, and published guaranteed minimum prices to that end, we do not think that there was any offer to purchase *all economically and metallurgically amenable uranium ores irrespective of the type of ore involved or its geographical location.*

In *Radium Mines, Inc.* v. *United States,* 139 Ct. Cl. 144, 153 F. Supp. 403 (1957), we considered the applicability of Circular No. 5 to a more limited claim. There, we said that Radium Mines, Inc. had no contract with the government because the AEC reasonably determined that the uranium was not recoverable, as was its right under the express terms of Circular No. 5. We answered the government's argument that Circular No. 5 was not an offer by saying:

> It could surely not be urged that one who had complied in every respect with the terms of the Circular could have been told by the Government that it would pay only half the "Guaranteed Minimum Price," nor could he be told that the Government would not purchase his uranium at all. [139 Ct. Cl. 144, 148, 153 F. Supp 403, 406.]

The position of the plaintiffs here is "shakier" than Radium Mines, Inc. They concede, of course, that "technically" the Circular No. 5 "offer" could not comprehend their ores as it expressly applies only to "carnotite-type or roscoelite-type ores of the Colorado Plateau area" delivered to the AEC buying depot at Monticello, Utah. Nor could Circular No. 1 comprehend their concentrate, as it applies only to high grade ores and concentrates. So they are forced to broaden any "offer" that might be contained in the circulars, and they do this by directing us to the policy statements, notably the May 24, 1956 announcement, and the alleged procurement practices of the Commission. We do not need to state precisely what the AEC's offer might have been. It is enough to say that it was not sufficiently broad to have ripened into the contract plaintiffs assert here.

Even if we were to accept plaintiffs' theory of continuing offer, we do not think plaintiffs have shown that they either did accept or could have accepted it simply by submitting proposals. For the bilateral, "implied in fact" contract plaintiffs seek to establish, we look for facts which permit us to infer a "return promise * * * [from] a document, an act, or a course of conduct." *The Padbloc Co., Inc.* v. *United States,* 161 Ct. Cl. 369, 377-78 (1963). The decision in *Radium Mines* (although focusing on unilateral contract theory) can be read as saying that such a contract comes into being when the producer accepts the government's offer by "putting itself in a position to supply the ore described in the circular." *Himfar* v. *United States,* Ct. Cl.

No. 328-60, slip op. p. 6, decided January 21, 1966. In our recent per curiam decision in *Himfar,* we chose this approach, and held that a regulation relating to the purchase of manganese ore at guaranteed minimum prices induced such "significant action" by the plaintiff to find and mine ore that the government was obligated to receive and pay for ore meeting the requirements of the regulation. We said that "the consideration for this obligation was the plaintiff's finding of manganese and his efforts to produce it." Ct. Cl. No. 328-60, slip op. p. 6.

Although this theory might at first appear to give plaintiffs heart, we feel that they fail both the tests of "significant action" and "meeting the requirements of the regulation." In *Himfar,* the plaintiff had received the required certificate of authorization and had made substantial deliveries of ore. It was the government's refusal to accept and unload a delivery, as well as its refusal to accept future shipments, that precipitated the lawsuit. By contrast, plaintiffs here have made no deliveries. In fact, at the time Northwest submitted the specific proposals it had never mined ore. There were, of course, good reasons for Northwest to hold back on further development until a contract could be finalized. We appreciate that the AEC was the sole market for uranium and that no reasonable businessman would proceed beyond the development stage until he could be sure he could sell the product to the AEC on a profitable basis. It would simply have been impossible for Northwest to have done much more than it did; but what it did was not enough, and we say this with full knowledge that Northwest no doubt reasonably relied on the AEC's general policy of buying almost all available uranium products.

In holding that plaintiffs have not accepted the offer they assert here, we look to the problem of price, the low grade of the ore and the complexity of the proposal for upgrading it in the concentrator plant, the short life period of the stated reserves when compared with the usual amortization

period for uranium processing mills, and the fact that Northwest proposed to process only *its* ores contrary to general AEC policy which was to make some plant capacity available to custom producers. Surely many of these problems could have been ironed out in negotiations between plaintiffs and the AEC, and a contract could have been "formalized." This is not the kind of contract a court should feel constrained to write, however. This is precisely the kind of contract that the AEC intended to leave to negotiation, and Circulars No. 1 and No. 5, as well as the announcement of May 24, 1956 and the statements by AEC officials to Northwest, gave ample notice of this intention.

Probably the plaintiffs' best argument is that the government is estopped to deny the existence of a contract because of plaintiffs' reliance. This is really the promissory estoppel theory we alluded to in *Radium Mines*. Much of what we have said above answers this argument, but in the interest of clarity, we dispose of this contention separately. The Restatement of Contracts binds the promisor "if injustice can be avoided only by enforcement of the promise" when the promisor makes a promise which he "should reasonably expect to induce action * * * on the part of the promisee * * * and which does induce such action." Restatement, Contracts § 90, Tent. Draft No. 2 (April 30, 1965). We do not resort to section 90 lightly; it is not an automatic rule. "Injustice" is the ultimate test, and this leaves us great flexibility. In determining whether this test is met, we shall be guided by the following factors:

> Satisfaction of the latter requirement [enforcement must be necessary to avoid injustice] may depend on the reasonableness of the promisee's reliance, on its definite and substantial character in relation to the remedy sought, on the formality with which the promise is made, on the extent to which the evidentiary, cautionary, deterrent and channeling functions of form are met by the commercial setting or otherwise, and on

> the extent to which such other policies as the enforcement of bargains and the prevention of unjust enrichment are relevant. [Restatement, Contract § 90, Comment b., Tent. Draft No. 2, p. 166 (April 30, 1965.]

When we apply these criteria to Northwest's activities and dealings with the AEC, we find that plaintiffs fall far short of the mark.

Looking first at the "promise," which is the alleged "continuing offer" discussed earlier, we are not persuaded that the AEC should have expected that it would be bound to a contract by action like that performed by Northwest. We think that the AEC could have reasonably anticipated that it would be bound only by more substantial performance in accordance with the precise terms of its circulars, or, of course, by a negotiated contract. We do not feel that justice requires us to charge the defendant with plaintiffs' hoped for profits where the reliance consisted of exploration and the preparation of an integrated plan for the mining and processing of ore. Regarding the "formality with which the promise is made," we note that plaintiffs had ample notice that negotiated contracts were the rule for situations deviating from the relatively limited provisions of the circulars. There was no formal promise to buy *all* uranium regardless of mining and processing difficulties, and any informal promise was not sufficiently broad to comprehend plaintiffs' reliance. Finally, as a matter of policy, we do not think this is the proper case for us to "avoid injustice" by enforcement of a "promise." As we mentioned earlier in discussing plaintiffs' acceptance argument, the contract plaintiffs assert involves exceedingly complex, technical issues that could be resolved only by extensive study and negotiations. The interests of "the commercial setting" would not be well-served by our finding that a contract existed here.

Similarly, the plaintiffs do not have a claim for partial enforcement.[5] They have not established that they did anything more than many other parties who unsuccessfully "bid" for a contract with the government. For partial enforcement by promissory estoppel, we would look for something more. Like the first year law student confronted with the problem of determining at what point there is an enforceable contract where someone promises $5 to any person who crosses the Brooklyn Bridge,[6] we would at least require the promisee to get to the bridge. In the present action, plaintiffs did not reach that point.

In summary, we hold that defendant neither made the offer plaintiffs allege nor did plaintiffs accept any offer, and plaintiffs did not make an offer which the defendant accepted. Plaintiffs understandably hoped that a contract would be consummated, but the defendant's change in procurement policy was reasonable and within the business risk which plaintiffs assumed as uranium speculators. Granting that the change in policy on October 28, 1957 was to be prospective only and all prior proposals were to be viewed "in the light of the discussions which have taken place," we feel that the parties were at no time close to a contract and that the AEC was accordingly reasonable in discontinuing negotiations after the policy change.

The petition is dismissed.

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[5] Plaintiffs ask for no remedy other than lost profits. Section 90 of the No. 2 Tentative Draft of the Restatement of Contracts (April 30, 1965) has added the following sentence: "The remedy granted for breach may be limited as justice requires." The Reporter comments: "The principal change from the original Restatement is the recognition of the possibility of partial enforcement." Tent. Draft No. 2, p. 173. Since plaintiffs have a more appealing claim for damages covering provable reliance, we have reviewed the facts in the light of the trend shown in the Restatement.

[6] Wormser, *The True Conception of Unilateral Contracts*, 26 Yale L.J. 136-139 (1916).

FINDINGS OF FACT

The court, having considered the evidence, the report of Trial Commissioner Roald A. Hogenson, and the briefs and argument of counsel, makes findings of fact as follows:

1. Upon the pretrial stipulation of the parties, approved by the trial commissioner, the trial of this case was limited to the issues of law and fact relating to the right of the plaintiffs to recover, reserving the determination of the amount of recovery, if any, for further proceedings.

2. During World War II, defendant's Manhattan Project developed the atomic bomb and created an urgent military requirement for the uranium necessary for such atomic weapons. Known sources of uranium were primarily the rich pitchblende-type ore deposits in two mines, one in the Belgian Congo, and the other in northern Canada. Low-grade uranium ores were known to exist in limited quantities in the western United States on the Colorado Plateau. These were carnotite-type and roscoelite-type ores, mined and milled for recovery of vanadium therefrom, with the uranium remaining in the discarded mill tailings. No other domestic source of uranium was known. The Manhattan Project relied mainly upon production by the Belgian Congo mine as its source of uranium, but also drew upon the tailings of the Colorado Plateau vanadium mills.

After the end of hostilities in World War II, four of the five vanadium mills on the Colorado Plateau closed. Production of vanadium was minimal, and recovery of uranium as a byproduct of the milling of the vanadium ores had ceased.

3. A domestic uranium industry was practically nonexistent when the Atomic Energy Commission was created pursuant to the Atomic Energy Act of 1946, approved August 1, 1946, 60 Stat. 755, to supervise and direct programs and activities relating to fissionable materials and their military and civilian applications. The act contained a declaration of policy of

> * * * the people of the United States, that, subject at all times to the paramount objective of assuring the common defense and security, the development and utilization of atomic energy shall, so far as practicable, be directed toward improving the public welfare, increasing the standard of living, strengthening free competition in private enterprise, and promoting world peace.

The Atomic Energy Act of 1954, approved August 30, 1954, 68 Stat. 919, contained a similar declaration of policy, stating that atomic energy was capable of application for peaceful as well as military purposes, with the paramount objective being maximum contribution to the common defense and security.

4. The enabling legislation authorized the AEC to procure source material, defined as uranium, thorium, or any other material determined to be peculiarly essential to the production of fissionable materials, the latter term being defined as plutonium, uranium enriched in the isotope 235, or any other material determined to be capable of releasing substantial quantities of energy through nuclear chain reaction.

With respect to acquisition of source materials, the 1946 act provides as follows:

> (5) ACQUISITION.—The Commission is authorized and directed to purchase, take, requisition, condemn, or otherwise acquire, supplies of source materials or any interest in real property containing deposits of source materials to the extent it deems necessary to effectuate the provisions of this Act. Any purchase made under this paragraph may be made without regard to the provisions of section 3709 of the Revised Statutes (U.S.C., title 41, sec. 5) upon certification by the Commission that such action is necessary in the interest of the common defense and security, or upon a showing

that advertising is not reasonably practicable, and partial and advance payments may be made thereunder. The Commission may establish guaranteed prices for all source materials delivered to it within a specified time. Just compensation shall be made for any property taken, requisitioned, or condemned under this paragraph. [42 U.S.C. § 1805(b)(5) (1946 Ed.)]

The 1954 act contains substantially the same provisions.

5. Neither the enabling legislation nor any AEC regulations prescribe formalities as to the terms or type of contract necessary to establish valid and enforceable obligations in the conduct of the atomic energy program.

6. The two major categories of uranium source material which the AEC has procured, both from domestic and foreign suppliers, consist of "ores" of various types (or mechanical concentations of such ores) and "concentrates." Uranium concentrate, also commonly referred to as "yellow cake," is a granular substance, resulting from the milling or processing of uranium-bearing ores or other uraniferous materials such as mill tailings, which varies in color, appearance, and precise chemical composition, depending upon the materials from which it is derived and the treatment processes which have been employed. Its principal constituent is uranium oxide, U_3O_8, precipitated from the treated material by one of a variety of metallurgical processes. The high-grade concentrate or precipitate is the final product falling within the "source material" category and hence the ultimate object of all raw material procurement activities.

7. Uranium is found in a number of different minerals, such as uraninite, torbernite, autunite, uranophane, schroeckingerite, and carnotite, and the ore containing such mineral is named for that predominant or significant mineral, even though several other minerals are generally contained in such ore. The various types of uranium-bearing ores differ

substantially in their composition and in the metallurgical treatment processes required for the successful recovery of the U_3O_8 content.

8. Throughout the period of time pertinent to this case, the administration of the AEC's source materials program, both foreign and domestic, has been under the direction and responsibility of the Division of Raw Materials in Washington, D. C. The Director of the Division of Raw Materials at all times since January 1, 1950, has been Mr. Jesse C. Johnson, who had served for the 2 years immediately preceding that date as Deputy Director. In turn, the Grand Junction Operations Office, Grand Junction, Colorado (hereinafter called Grand Junction), was charged with the administration of domestic raw material procurement in all areas west of the Mississippi River. At the times most pertinent to this case, Mr. Allan E. Jones has served as manager of Grand Junction.

9. Following the breakdown of the 1946-1947 efforts in the United Nations to create a system of control of nuclear weapons, the United States by reason of defense policy had an urgent military requirement for uranium. The AEC early directed its efforts to reduce excessive dependence of the United States on the Belgian Congo source of supply through stimulation of discovery, exploration, development, and mining by private industry of domestic reserves of uranium-bearing ores.

At the inception of the domestic uranium program, the United States conducted extensive exploration for uranium ores, discovering about one million tons of such ore reserves, whereas private industry thereafter discovered about eighty million tons.

10. In 1947 the AEC acquired a surplus vanadium mill located near Monticello, Utah, on the Colorado Plateau, and undertook to adapt it to the recovery of uranium from the carnotite-type and roscoelite-type ores of the surrounding area, principally the Uravan Mineral Belt in Colorado.

In succeeding years, the Monticello mill was the only processing or milling facility under the ownership and operation of the AEC, and it served a number of functions other than to refine and supply concentrate for the atomic energy program, including assistance in the practical application of new processing techniques under study and development of the AEC research facilities in Winchester, Massachusetts, and Grand Junction, Colorado, and also assistance in the accumulation of processing cost data useful in the negotiation of concentrate contracts with private milling concerns.

11. Beginning in 1948, the AEC formulated its program for development of domestic sources of uranium, and its announced policy was to stimulate private industry to engage in widespread prospecting, exploration and development of uranium ore reserves, and, since the United States was to be the sole purchaser of uranium, to give adequate guarantees as to the price and period of purchase in order that private industry could finance and operate uranium mines and mills.

In repeated public announcements, the AEC made plain its policy to limit its direct purchase of uranium ores, and to have uranium mills privately owned and operated, with raw material procurement by the AEC to be principally in the form of uranium concentrates sold by the mills to the AEC under negotiated written contracts.

12. Beginning in 1948, and for all pertinent years thereafter, a number of measures were undertaken by the AEC as a means of lending assistance and encouragement to private industry in the development of the uranium industry. Among these were the setting up of field offices to assist people searching for uranium deposits; the publication and dissemination of literature on uranium prospecting; the distribution of radiation anomaly maps derived from airborne surveys with scintillometers of vast areas of the west, conducted by the AEC; the display of ore

samples; response to specific inquiries relating to geological or mining matters, assays of ore samples without charge; metallurgical testing of uranium ores to determine amenbility to precessing; conduct of drilling operations and the calculation of ore reserves on specific properties; the building of access roads in remote areas to facilitate the removal of ore to markets; construction of a pilot plant at Grand Junction, Colorado, to develop improved processes for treatment of uranium-bearing ores; establishment of ore-buying stations at wide-spread places in the western United States; and issuance of numerous press releases on developments in the expanding uranium industry.

13. The AEC considered and rejected early in the formulation of its domestic uranium program the establishment of a uniform price at which it would purchase uranium concentrate from the mills. It could not arrive at a uniform price because it was impossible to forecast operating costs and depreciation schedules for different milling operations.

Consequently, the AEC determined and announced publicly that all uranium concentrate purchases would involve individually negotiated contracts for the construction and operation of privately owned mills, with the contracts providing for purchase of the mill concentrates, the price to be arrived at by taking into account the ore cost and the estimated milling cost, including plant amortization and profit.

14. Commencing on April 11, 1948, the AEC issued a series of Domestic Uranium Program Circulars, all of which were duly published in the Federal Register.

15. Domestic Uranium Circular No. 1, hereinafter called Circular 1, went into effect on April 11, 1948, and expired on April 10, 1958. Circular 1 provides as follows:

§ 60.1 *Ten year guaranteed minimum price*—(a) *Guarantee.* To stimulate domestic production of

uranium and in the interest of the common defense and security the United States Atomic Energy Commission hereby establishes the guaranteed minimum prices specified in paragraph (b) of this section, for the delivery to the Commission, in accordance with the terms of this section during the ten calendar years following its effective date, of domestic refined uranium, high-grade uranium-bearing ores and mechanical concentrates, in not less than the quantity and grade specified in paragraph (e) of this section. This guarantee does not apply to uranium-bearing ores of the Colorado Plateau area, commonly known as carnotite-type or roscoelite-type ores, prices for which are established by § 60.3.

NOTE: The term "domestic" in this section, referring to uranium, uranium-bearing ores and mechanical concentrates, means such uranium, ores, and concentrates produced from deposits within the United States, its territories, possessions and the Canal Zone.

(b) *Guaranteed minimum prices.* The following minimum prices are established:

(1) For uranium-bearing ores and mechanical concentrates, $3.50 per pound of U_3O_8 (uranium oxide) determined by the Commission to be recoverable, less cost per pound of refining such ores or concentrates to standards of purity required for the Commission's operations, to be determined by the Commission after assay of a representative sample.

(2) For refined uranium products, $3.50 per pound contained U_3O_8 (uranium oxide).

Prices are f.o.b. railroad cars or trucks at shipping point designated by the Commission convenient to mine, mill, or refinery. Weights are avoirdupois dry weight.

(c) *Making an offer.* Anyone who has domestic refined uranium, high-grade uranium-bearing ores, or mechanical concentrates of the quantity and grade specified in paragraph (a) of this section, may offer it for delivery to the Commission by sending a letter or telegram addressed as follows:

United States Atomic Energy Commission,
Post Office Box 30, Ansonia Station,
New York 23, N. Y.

Attention: Division of Raw Materials.

With each offer there should be furnished a representative ten-pound sample and the following information:

(1) Location of property;

(2) Character of material offered for deliverey (state whether refined uranium, mechanical concentrates, or uranium-bearing ores, indicating approximate composition);

(3) Amount of material offered;

(4) Location of material offered;

(5) Origin of material if offered by other than producer;

(6) If material is owned, in whole or in part, by any person other than the person making the offer, the name of each person having such ownership and nature of his rights; and

(7) Name and address of person making the offer.

NOTE: The reporting requirements hereof have been approved by the Bureau of the Budget pursuant to the Federal Reports Act of 1942.

(d) *Purchase contract.* Upon receipt of an offer and sample, an analysis of the sample will be made. If

the sample and the information furnished are determined by the Commission to meet the conditions of this section, the Commission will forward to the person making the offer a form of contract containing applicable terms and conditions ready for his acceptance. Prices will be not less than the applicable prices of paragraph (b) of this section.

(e) *Minimum quantity and grade.* No delivery will be accepted under this secton of less than ten short tons (2,000 pounds per ton) of ores or mechanical concentrates, nor of ore or mechanical concentrates which assay less than 10 per cent U_3O_8 by weight. No delivery will be accepted under this section of less than one short ton of refined uranium, nor of refined uranium which contains by weight less than 97 per cent U_3O_8 in black uranium oxide or 87 per cent U_3O_8 in sodium uranate. However, the Commission will be interested in negotiating reasonable terms with respect to deliveries of high-grade ores and refined products in lesser quantities and grades than those specified in this section.

(f) *Large quantities or special conditions.* The prices established in paragraph (b) of this section are minimum prices. The Commission may by negotiations establish higher prices for guaranteed delivery of lots of ores or mechanical concentrates substantially in excess of ten short tons, or for lots of refined uranium substantially in excess of one short ton. The Commission also may by negotiation establish higher prices for delivery of ores, mechanical concentrates or refined uranium under other special conditions, taking into consideration such factors as refining and milling costs, transportation costs, and other applicable factors.

(g) *Other valuable minerals.* In making payment for material delivered to it in accordance with this section, the Commission will give consideration to the

existence of recoverable gold, silver, radium, thorium, or any other valuable constituent in the light of the cost of recovery.

(h) *Licenses.* Arrangements will be made by the Commission for the issuance of licenses, pursuant to the Atomic Energy Act of 1946, covering deliveries of source material to the Commission under this section. (Sec. 5(b), 60 Stat. 761.)

16. Domestic Uranium Circular No. 5, published simultaneously with Circular 1 in the Federal Register, was effective through June 30, 1954, but was later reissued and published in the Federal Register on March 12, 1951, as Domestic Uranium Circular No. 5, Revised, effective through March 31, 1962, and is referred to in these findings either as Circular 5 or Circular 5, Revised.

Circular 5, Revised, provides as follows:

§ 60.5 *Guaranteed minimum price for uranium-bearing carnotite-type or roscoelite-type ores of the Colorado Plateau area*—(a) *Guarantee.* To stimulate domestic production of uranium-bearing ores of the Colorado Plateau area, commonly known as carnotite-type or roscoelite-type ores, and in the interest of the common defense and security, the United States Atomic Energy Commission hereby establishes the guaranteed minimum prices specified in § 60.5a effective during the period March 1, 1951, through March 31, 1962, for the delivery of such ores to the Commission at Monticello, Utah, in accordance with the terms of this section and § 60.5a.

NOTE: In §§ 60.1 and 60.2 (Domestic Uranium Program, Circulars No. 1 and 2), the Commission established guaranteed prices for other domestic uranium-bearing ores, mechanical concentrates, and refined uranium products.

(b) *Effect on §§ 60.3 and 60.3a.* Sections 60.3 and 60.3a, which also apply to carnotite and roscoelite ores, are not revoked by the issuance of this section and § 60.5a and sellers may elect to deliver ore under the provisions of §§ 60.3 and 60.3a rather than under this section and 60.5a, at their option, during the unexpired terms of §§ 60.3 and 60.3a (through April 11, 1951). It is believed, however, that in most cases the provisions of this section and § 60.5a will be more favorable to producers.

(c) *Definitions.* As used in this section and in § 60.5a, the term "buyer" refers to the U.S. Atomic Energy Commission, or its authorized purchasing agent. The term "ore" does not include mill tailings or other mill products. The term "seller" refers to any person offering uranium ores for delivery to the Commission. Weights are avoirdupois dry weights, unless otherwise specifically provided.

(d) *Deliveries of not to exceed 1,000 tons per year.* To aid small producers, any one seller may deliver without a written contract but otherwise in accordance with this circular up to, but not exceeding, 1,000 short tons (2,000 pounds per ton) of ores during any calendar year.

(e) *Deliveries in excess of 1,000 tons per year.* Sellers desiring to deliver in excess of 1,000 short tons (2,000 pounds per ton) of ores during any calendar year will be required to enter into a contract with the Commission providing for, among other things, a rate of delivery and the total quantity of ore to be delivered.

(f) *Delivery.* Seller, at his own expense, shall deliver and unload all ores at the buyer's depot at Monticello, Utah. Deliveries shall be in lots of not less than 10 short tons (2,000 pounds per ton) unless special arrangements have been agreed upon by buyer, but such

lots may be delivered in more than one load. Days and hours during which ore may be delivered will be posted at the depot.

(g) *Weighing, sampling, and assaying.* Buyer will bear the cost of weighing, sampling, and assaying. The net weight of each load will be determined by the buyer's weighmaster on scales which will be provided by the buyer at or in the vicinity of the purchase depot and such weight will be accepted as final. A weight ticket will be furnished seller or his representative for each load. Each lot of ores will be sampled promptly by the buyer according to standard practice and such sampling will be accepted as final. Seller or his representative may be present at the sampling at his own expense. The absence of seller or his representative shall be deemed a waiver of this right. Buyer will make moisture determinations according to standard practices in ore sampling. All final samples will be divided into four pulps and distributed as follows: (1) The seller, or his representative will receive one pulp; (2) the buyer will retain one pulp; (3) the other two pulps will be reserved for possible umpire analysis. The buyer's pulp will be assayed by the buyer. The seller may, if he desires, and at his own expense, have his pulp assayed by an independent assayer. In case of disagreement on assays as to any constituent of the ores, an umpire shall be selected in rotation from a list of umpires approved by the buyer whose assays shall be final if within the limits of the assays of the two parties; if not, the assay which is nearer to that of the umpire shall prevail. The party whose assay is the farther from that of the umpire shall pay the cost of the umpire's assay for the constituent of the ores which is in dispute. In the event that the umpire's assay is equally distant from the assay of each party, costs will be split equally. In case of seller's failure to make or submit assays, buyer's assays shall govern.

After sampling, the ores may be placed in process, commingled, or otherwise disposed of by buyer.

(h) *Payment.* Buyer will make payment promptly but payment will not be made until an entire minimum lot of ten short tons (2,000 pounds per ton) has been delivered and accepted, unless special arrangements have been agreed upon by buyer, in which case there may be an extra charge for assaying and sampling. Moisture determinations, analyses and settlement sheets, together with the check in payment, will be mailed to seller.

(i) *Inquiries.* All inquiries concerning the provisions of this section and § 60.5a, offers to deliver ores, or questions about the Commission's domestic uranium program in the Colorado Plateau area should be addressed to:

United States Atomic Energy Commission, Post Office Box 270, Grand Junction, Colorado; Telephone: Grand Junction 3000.

(j) *Licenses.* Arrangements will be made by the Commission for the issuance of licenses, pursuant to the Atomic Energy Act of 1946, covering deliveries of source material to the Commission under this section and § 60.5a.

(k) *Limitation of commitment.* Commitments by the Commission to accept delivery of ores are limited to the provisions of this section and § 60.5a as amended from time to time, or to written contracts between the Commission and sellers. Other commitments purporting to be made by the Commission's field personnel or other agents of the Commission will not bind the Commission unless they are in accord with the provisions of this section and § 60.5a or other official circulars.

§ 60.5a. *Schedule I; minimum prices, specifications, and conditions*—(a) *Prices.* Payment for delivery of the ores will be computed on the following basis:

(1) *Uranium.* (i) Ores assaying less than 0.10 percent: no payment. Any such ores which are delivered to the purchase depot shall, unless otherwise specifically agreed to by buyer, become the property of the buyer as liquidated damages for buyer's expense of weighing, sampling, and assaying, and after sampling, may be placed in process, commingled, or otherwise disposed of by buyer. If seller has any question as to the quality of his ore, it is suggested that before shipment and delivery to the purchase depot a representative sample be submitted to the buyer or to one of the umpires for assay at seller's expense. The buyer at its discretion may assay a limited number of samples without charge.

(ii) Ores assaying 0.10 percent U_3O_8 and more, as follows:

U_3O_8 assay:	Payments per pound U_3O_8
0.10 percent	$1.50
0.11 percent	1.70
0.12 percent	1.90
0.13 percent	2.10
0.14 percent	2.30
0.15 percent	2.50
0.16 percent	2.70
0.17 percent	2.90
0.18 percent	3.10
0.19 percent	3.30
0.20 percent and more	3.50

(iii) Premiums on uranium: $0.75 per pound for each pound of U_3O_8 in excess of 4 pounds U_3O_8 per short ton (2,000 pounds per ton) of ore and an additional premium of $0.25 per pound for each pound in excess of ten pounds U_3O_8 per short ton. Fractional

parts of a pound will be paid for on a pro rata basis to the nearest cent.

(2) *Vanadium.* V_2O_5 at $0.31 per pound up to, but not exceeding, ten pounds of V_2O_5 for each pound of U_3O_8 contained in ores. No factor will be included for V_2O_5 in excess of ten pounds for each pound of U_3O_8 although buyer may, from time to time, publicly announce that, for limited periods by written agreements with individual producers, V_2O_5 in excess of ten-to-one will be paid for. Any such announcement will be made by posting a notice to this effect at the Monticello depot and through such other channels as are deemed suitable to achieve maximum dissemination among producers. Excess V_2O_5 shall be deemed to be buyer's property.

(3) *Allowances.* (i) A development allowance of $0.50 per pound U_3O_8 in ores assaying 0.10 percent U_3O_8 or more in recognition of expenditures incurred or likely to be incurred in the development or exploration necessary for maintaining and increasing developed reserves of uranium ores. Fractional parts of a pound will be paid for on a pro rata basis to the nearest cent.

(ii) A haulage allowance of 6 cents per ton mile for transportation of ore paid for under §§ 60.5 and 60.5a from the mine where produced to the purchase depot specified by the Commission, up to a maximum of 100 miles. The haulage distance from the mine to the purchase depot will be determined by the Commission and its decision will be final. Tonnages for purposes of this allowance shall be calculated on the basis of natural weights rather than dry weights.

(4) *Adjustment of assays.* Assays shall be adjusted to the nearest 0.01 percent for purposes of payment.

(b) *Quality and size.* Ores will not be accepted by buyer under §§ 60.5 and 60.5a which, in buyer's judgment:

(1) Contain less than 0.10 percent U_3O_8;

(2) Contain more than three parts of lime ($CaCO_3$) to one part of V_2O_5, or a total of more than 6 percent lime in the ore;

(3) Contain impurities deleterious to buyer's extraction process or for any other reason are not amenable to it;

(4) Contain lumps in excess of twelve inches in size.

NOTE: The Commission will be interested in discussing arrangements for delivery to it of types of uranium-bearing materials other than those for which guaranteed prices have been established, such as tailings, mill products, and ores of types not acceptable under §§ 60.5 and 60.5a.

17. In a formal speech released to press and radio and delivered at a meeting of the American Mining Congress on August 30, 1950, Mr. Jesse C. Johnson, AEC Director of Raw Materials, stated the AEC uranium procurement policies under Circulars 1 and 5 as follows:

> Let me review briefly this program and show how it will apply to ores not covered by Circular No. 5, which relates to carnotite ores of the Colorado Plateau, or by Circular No. 1, which is for high-grade ores.
>
> As previously indicated, the Commission's buying schedules and policies for carnotite ores of the Colorado Plateau already have resulted in active development and production in that area. Circular No. 1, which established a ten-year guaranteed minimum price for high-grade ores and concentrates, was designed for high-grade pitchblende deposits of the type which in the past had furnished most of the world's uranium. Except for the Colorado carnotite deposits, which were covered by a special buying schedule, we had little basis for predicting the kind of uranium deposits

which would be found in the United States. There had been little interest in, and little prospecting for uranium. We considered it likely that other deposits might be found to which the Circular No. 1 schedule would not apply. Therefore, a provision was included in Circular No. 1 for special arrangements under negotiated contracts when justified by the quantity and the cost of production.

Our experience during the past two years indicates that most domestic uranium ores will require special schedules. Therefore, there is need for a more definite statement of price policy—a statement which gives the essential terms of ore-buying schedules that may be established and also the basis upon which the Commission will purchase high-grade mill concentrates and precipitates.

Ore-buying schedules for crude ore not covered by Circulars No. 1 and No. 5 will be established for each mill, based on the prices for uranium content set forth in Circular No. 5, the circular which applies to carnotite ore of the Colorado Plateau. Contracts for construction and operation of mills will be arrived at by negotiation. It is expected that most of these contracts will be for the purpose of mill concentrates or precipitates at a unit price. The price paid for the mill product will be arrived at by taking into account ore cost and the estimated milling cost, including plant amortization, metallurgical losses and profit. For the purpose of such negotiations, all mills may be considered custom mills, even though the ore supply and mill may be owned by the same company. It is expected, however, that most mills will treat at least some custom ore.

18. In addition to its announcement of the guaranteed minimum prices in Circular 1 and Circular 5, the AEC, in order to encourage the discovery of new uranium resources

and particularly as an aid to small producers, offered two types of bonuses. By Circular 2, a bonus of $10,000 was offered, concurrently with the publication of Circular 1, upon the delivery in accordance with the provisions of Circular 1 of the first 40,000 pounds of ore or mechanical concentrates, assaying 20 percent or more U_3O_8, produced from a previously unworked deposit. The offer was expressly inapplicable to carontite-type and roscoelite-type ores. Beginning March 1, 1951, the AEC offered by Circular 6 a second bonus, the total amount of which was on a graduated scale of from $1.50 to $3.50 per pound of U_3O_8 in accordance with the grade of ore, which was payable upon the first 10,000 pounds of U_3O_8 contained in ores which represented the initial production of an individual property upon their delivery to and purchase by an ore-buying station or a mill. The bonus was not restricted in its applicability to particular types of ore.

19. After the issuance of Circulars 1 and 5, discovery was made in 1949 of certain low-grade uranium-bearing ores of the autunite and tobernite varieties occurring off the Colorado Plateau at Marysvale, Utah. On March 15, 1950, the AEC established an ore-buying station at Marysvale, Utah, to purchase such ores.

Over the succeeding years, numerous additional uranium-bearing ore deposits were discovered off the Colorado Plateau over a vast area of the western United States, such ores being classified other than as carnotite-type or roscoelite-type. The AEC established ore-buying stations at various places to purchase such ores, in 1952 at Shiprock, New Mexico, and at Edgemont, South Dakota; in 1954 at Moab, Utah, and at White Canyon, Utah; in 1955 at Riverton, Wyoming, and at Globe, Arizona; and in 1956 at Tuba City, Arizona, at Grants, New Mexico, and at Crooks Gap, Wyoming.

These and later buying stations were temporary means of providing a market for newly discovered and developed

uranium ores, and each of such buying stations was closed as soon as privately-owned milling facilities were provided in the particular area, pursuant to a negotiated contract between the mill operators and the AEC for the purchase by the latter of uranium concentrate produced.

20. Throughout its operations, the AEC has uniformly followed its announced policy of purchasing from any one producer without written contract up to 1,000 tons per year of uranium ore, meeting Circular 5 standards, at its buying station at Monticello, Utah. Any purchase at Monticello of such ores from any producer in excess of 1,000 tons per year has been made only pursuant to written contract negotiated between the AEC and such producer.

All purchases of uranium ore at any other AEC buying station, irrespective of the tonnage sold by any producer in any year, have been made only pursuant to written contracts negotiated between the AEC and the producers.

All purchases of uranium concentrate by the AEC have been made only pursuant to various formal contracts negotiated between the AEC and the various mill owners. Each of the uranium concentrate contracts, commonly referred to as mill contracts, was negotiated and executed prior to the construction of the uranium concentrate mill.

The AEC program of entering into formal contracts for buying of uranium ores and purchase of uranium concentrates pursuant to negotiated mill contracts was widely publicized and constituted common knowledge throughout the domestic uranium industry.

21. As uranium-bearing ore discoveries extended beyond the Colorado Plateau and to ores other than carnotite-type and roscoelite-type, the U_3O_8 price schedule and conditions of Circular 5 were applied to purchases of such ores in all areas except the lignite-ore area of North Dakota. Repeated public announcements were made that the Circular 5 price schedule and conditions would be so applied, both in

the various press releases concerning establishment of the various new ore-buying stations and in various public speeches released to the press and delivered by officials of the AEC. The ore-buying contracts expressly applied Circular 5 prices.

The mill contracts uniformly and expressly provided as part of the formula for fixing the price to be paid for uranium concentrate, the factor of allowance of Circular 5 prices for the uranium ore processed, whether such ore was that produced by the mill operator or custom ore sold to the mill by another producer. In fact, the mill contract required the mill operator to pay not less than Circular 5 prices to the producer of custom ores.

The purpose of using the price schedule of Circular 5 in both ore-buying contracts and mill contracts was to establish an ore price as nearly uniform as possible, subject only to provided penalties and to determination of amenability of the ore. The policy of the AEC was that no lesser or greater prices should be paid for ores purchased off than on the Colorado Plateau.

22. Each concentrate contract, or mill contract, in the domestic uranium program was negotiated with the owner or owners of a substantial supply of amenable uranium ore in the area to be served by the mill. As expressly provided in each of such contracts, the AEC required that to the extent of a specified percentage of the pertinent mill capacity, the mill owner purchase and process uranium ores, produced in the area by independent miners, when such custom ores met the standards of Circular 5.

Each of such mill or concentrate contracts was by its terms not subject to cancellation by unilaterial action of the AEC, and, in accordance with the terms thereof, the mill operator was guaranteed or assured a firm level of procurement during the period covered by the contract. The custom ore producers in that area as a group were assured a market at the mill to the extent of their respective partic-

ipation in the sale to the mill owner of the custom ores required to be processed.

23. Throughout its domestic uranium procurement program, the AEC issued press releases and otherwise released information about uranium developments by means of speeches delivered by its officials. The press releases reiterated military need of uranium, that the Government was the only purchaser of uranium and would probably remain so until the 1960's, and that the AEC program provided a guaranteed market for uranium concentrate produced by mills and for uranium ores purchased by mill owners or by the AEC.

On May 24, 1956, the AEC issued a public announcement concerning a new domestic uranium procurement program, as follows:

> The U.S. Atomic Energy Commission today announced establishment of a new domestic uranium procurement program for the period from April 1, 1962 through December 31, 1966, and an extension of the initial production bonus for uranium ore from February 28, 1957, its present expiration date, through March 31, 1960.
>
> The new domestic procurement program provides a guaranteed market for all uranium concentrates produced by domestic mills from domestic ores, subject to a limitation, at the Commission's option, of 500 tons of U_3O_8 per year from any one mining property or mining operation and to compliance with Commission specifications. The price established is $8.00 per pound of U_3O_8 contained in normal mill concentrates of precipitates.
>
> This action was taken in recognition of the need for a continuing Government market in order to maintain a high rate of exploration and development. Although domestic uranium production has shown a remarkable

expansion, known ore reserves will be greatly depleted by 1962 unless extended by agressive development and exploration. A high rate of discovery is essential if substantial production is to be maintained after that date. The new domestic uranium procurement program provides assurance of a government market for an additional period of almost five years beyond March 31, 1962. This assurance will assist uranium mining and milling firms in planning future operations.

The present uranium ore procurement program will remain in effect until March 31, 1962. The new program establishes a base price for domestic uranium concentrates, rather than ores, for the period from April 1, 1962, through December 31, 1966. The base price will be $8.00 per pound of U_3O_8 contained in concentrates meeting specifications. This price will be applicable to the type of concentrate, i.e., high grade chemical precipitates, which is being purchased presently under negotiated unit price contracts with milling companies.

The $8.00 price was determined on the basis of a study of existing contracts, known sources of supply and estimated costs of production.

A gradual transition from a government-controlled uranium market to a commercial market is expected to take place as industrial demand for uranium develops. Commission regulations permit the private purchase, sale and use of source materials under Commission license, with restriction only on certain uses such as utilization as a coloring agent in ceramics. Under the new procurement program, producers will be able to sell to licensed domestic commercial users in addition to the Commission.

Uranium concentrate producers desiring to sell to the Commission will be required to enter into contracts specifying the period of delivery, the quantity to be

delivered, the rate of delivery, the place of delivery, the type of packaging and other standard provisions of commercial-type contracts. The contracts may cover the period April 1, 1962, through December 31, 1966, or a shorter period. The Commission, at its option, may limit the purchase of concentrates derived from any one mining property or mining operation to 500 tons of U_3O_8 per year. Depending upon requirements additional quantities may be purchased. Such purchase of additional quantities may be at prices lower than $8.00.

Negotiated contracts executed prior to March 31, 1962, may provide for amortizing the cost of milling facilities over a period extending beyond March 31, 1962, with an amortization factor added to the $8.00 price established for the extended program. The amortization must be on not less than a five-year basis. If milling facilities are amortized or partially amortized under contracts executed with the Commission prior to March 31, 1962, the Commission may require that a reasonable percentage of mill capacity be made available for treatment of purchased or custom ores. There will be no commitment for the purchase of vanadium after March 31, 1962.

Pertinent details of the new program will be published at a later date.

The initial production bonus, which has been in effect since 1951, is paid on the first 10,000 pounds of uranium oxide in ore delivered from an eligible mining property to an authorized buying station or mill. The bonus ranges from $1.50 per pound of uranium oxide in ore assaying 0.10 percent uranium oxide to $3.50 per pound of uranium oxide in ore assaying 0.20 percent uranium oxide and above.

The bonus has encouraged prospecting and exploration by giving the prospector and small miner assistance during the early stages of development and min-

ing. In the case of mines in new areas remote from mills or buying stations, the initial production bonus may be an important factor in enabling the miner to ship his ore during the development period.

The initial production bonus also has sustained small marginal operations for considerable periods, and some of these have developed into profitable mines. Extension of the bonus for three additional years is expected to provide continued stimulus to prospecting and small mining operations.

Prior to May 24, 1956, all negotiated mill contracts provided for their termination on March 31, 1962, the expiration date of Circular 5, Revised.

24. By the end of 1956, due in large measure to the monumental discoveries in the Ambrosia Lake area near Grants, New Mexico, total uranium ore reserves had risen to more than 60,000,000 tons, approximately half of which were in the Ambrosia Lake area. During the same year, the commencement of operation of new mills and the expansion of existing mills had doubled the domestic concentrate production capacity, and eight new mills with a total production capacity equal to the 1956 increase were scheduled to begin operation within approximately the following year.

The general extent of the Ambrosia Lake developments was a matter of common knowledge within the uranium industry in 1956.

The extent of domestic uranium ore reserves was information which was classified and not released for publication or dissemination until December 13, 1956. On that date, the AEC declassified domestic ore reserve statistics for the period June 30, 1955, to December 13, 1956. On December 1, 1959, the AEC declassified such statistics for the period from 1948 to 1959. Such reserves increased from 1,000,000 tons in 1948, to 5,000,000 tons in 1953, to 27,000,000

tons in 1955, to 63,000,000 tons in 1956, and to 88,900,000 tons in 1959.

25. In a speech delivered on February 9, 1957, before a meeting of the National Western Mining Congress at Denver, Colorado, Mr. Johnson, reviewing the rapid increases in uranium ore reserves and milling facilities in relation to the military requirements programmed through 1966, noted the concern being expressed within the mining industry over the possibility that excess milling capacity would result from continued expansion of concentrate procurement for shortrun requirements. He indicated that, in assessing concentrate contract proposals, the AEC would henceforth look toward a prospective ore supply in the area of the mill sufficient to sustain mill operations at least through 1966 in order to assure continuity of procurement through the extended purchase program period and a gradual and sound transition to a commercial unranium market.

He observed that in past years, in an effort to meet the urgent military demands, concentrate contracts had often been negotiated and mills consequently constructed on the strength of known ore reserves sufficient to sustain operations for only 5 years, and in some instances for shorter periods on the "speculative chances of finding enough ore," but that such practices were no longer justified. He sounded a note of warning to those ore producers who had "come to expect a market for all the ore they could produce as fast as they could produce," and he cautioned them that it would become increasingly necessary thenceforth that they plan their operations with a view to more extended marketing periods consistent with existing milling facilities.

26. On October 28, 1957, Mr. Johnson delivered a speech (released to the press on the same date but never published in the Federal Register) before the Fourth Annual Conference of the Atomic Industrial Forum in New York, and announced that, by reason of a decision of official policy

determined by the Commission, limitations were being imposed upon the further expansion of concentrate purchase commitments. Mr. Johnson's statements were approved in advance by the Commissioners of AEC, and pertinent parts were as follows:

> * * * we have arrived at the point where it no longer is in the interest of the Government to expand production of uranium concentrate. It has been apparent for some time that this point was being approached. Reference was made to the changing uranium supply situation in the Commission's report to Congress on the Development, Growth and State of the Atomic Energy Industry (the so-called Section 202 Hearings) in early 1956 and again in 1957. In my talk to the National Western Mining Conference in Denver in February of this year, I stated that "Now that we no longer are faced with a uranium shortage, our methods of operation must be reviewed in the light of changed conditions." Since the beginning of this year, the possibilities of additional major increases in domestic uranium production have become apparent.
>
> It would be undesirable from the standpoint of industry, as well as the Government, to expand the uranium production rate beyond currently projected requirements and then be faced with a major curtailment at some later date. The objective should be to have a strong uranium industry, with substantial ore reserves, capable of expanding to meet the requirements for atomic power as these requirements develop.
>
> Under these circumstances the Commission, at this time, is faced with limiting commitments for additional domestc uranium production. Proposals for domestic contracts which already have been submitted and are under review still will be considered in the light of the discussions which have taken place. In some instances these discussions were initiated a year or more ago.

With respect to new proposals between now and 1962 for additional mill construction or mill expansion, the objective of the Commission will be to limit production to the approximate level which will be reached as a result of existing commitments. If new contracts are considered, preference will be given to providing a limited market for areas having no present milling facilities. Extensive development of new areas, or producing areas, should not be based upon the assumption that there is a current market for all the uranium that can be produced.

* * * * *

27. During the period of time between October 28, 1957, and April 2, 1958, the AEC withdrew or suspended the authority of its procurement officials to negotiate any new uranium concentrate or mill contracts which had not been approved in substance before October 28, 1957.

During this period, a comprehensive study was made by Grand Junction of the ore reserves and milling capacities in the various producing areas, and on April 2, 1958, the AEC authorized a "limited expansion" of concentrate purchase commitments in those areas in which, in the judgment of the AEC, the existing capacity was insufficient to provide a reasonable market for the ores of those areas. Contract proposals were subsequently entertained which led to the construction of several new processing mills and in the expansion of existing mills, primarily in certain areas of Wyoming in which ore reserves were extensive.

The Grand Junction study of the milling capacities of various producing areas likewise led to the designation of six areas in which existing milling facilities were considered by Grand Junction to be adequate in relation to the ore reserves of those areas, but in which substantial increases in the reserves of independent ores had been established after the execution of the concentrate contracts and in which certain problems might therefore be found to exist with

respect to provisions for the marketing of independent ores on an equitable basis.

28. On November 24, 1958, the AEC announced that the 1962-1966 domestic uranium concentrate program was to be modified. This announcement was published in the Federal Register and stated the following:

> 1. On May 24, 1956, the Atomic Energy Commission announced that it would guarantee the purchase of U_3O_8 in concentrates produced and delivered during the period April 1, 1962-December 31, 1966. The Commission will carry out its May 24, 1956, commitment with respect to ore reserves developed prior to this date in reliance upon the May 24, 1956, announcement by negotiating for the purchase of appropriate quantities of concentrates derived from such ore reserves during the 1962-1966 period. Such purchases will be at the previously established price of $8.00 per pound for U_3O_8 in an acceptable concentrate.
>
> 2. By issuance of this announcement the Atomic Energy Commission hereby withdraws prospectively the concentrate purchase program announced May 24, 1956. With respect to new ore reserves developed after this date, the Commission will make contracts to purchase concentrates to the extent that requirements dictate and on such terms and conditions and at such prices as the Commission may from time to time agree upon. Future programs will give due consideration to the adequacy of domestic ore reserves, the need for exploration and development, the maintenance of the domestic uranium industry, and other factors which may be important to the Atomic Energy Program.
>
> 3. The effect of this modification will be to provide the domestic uranium industry with a substantial continuing market for the period 1962-1966 for concentrates derived from already developed ore reserves, and, at the same time, guard against overproduction.

4. Under this revised program the Commission's 1962-1966 domestic uranium concentrate purchases from ore reserves already developed will be limited to:

(A) Current milling contracts;

(B) Appropriate extensions of current milling contracts to the extent the Commission determines that the milling facilities are needed for the presently existing mining operations and developed ore reserves;

(C) New milling contracts or amendments to existing contracts which may be executed pursuant to the Commission's April 2, 1958, announcement of the limited expansion of the domestic uranium procurement program;

(D) New milling contracts or contract amendments which may be negotiated for the purchase of appropriate quantities of concentrates in the 1962-1966 period from ore reserves developed between November 1, 1957, and the date hereof.

5. The action taken today is to guard against serious overproduction which might occur under an unlimited purchase program if very large additional uranium discoveries are made. The Commission's action recognizes the need for placing definite limitations on annual deliveries of concentrate and at the same time it gives due consideration to those who already have developed ore reserves in reliance upon the Commission's 1956 announcement. Protection will be given the independent miners by incorporating in all new milling contracts and extensions to existing milling contracts provisions designed to provide independent mine owners a fair share of available milling capacities.

6. Today's action is not due to any forecast of a reduction in the Commission's uranium requirements or

in the potential requirements for commercial atomic power. However, it is in the best interest of both the industry and the government to hold uranium production in reasonable balance with requirements.

29. After the completion of the expansion authorized by the AEC, the following private mills, under the ownership of the indicated contractors, were in operation:

Location	Contractor	Capacity (tons per day)	Approximate date of commencement of operations
Arizona:			
Tuba City	Rare Metals Corp. of America	300	1956
Colorado:			
Canon City	Cotter Corp.	200	(**)
Durango	Vanadium Corp. of America	750	(*)
Grand Junction	Climax Uranium Co.	330	(*)
Gunnison	Gunnison Mining Co.	200	1956
Maybell	Trace Elements Co.	300	1956
Rifle	Union Carbide Nuclear Co.	1,000	(*)
Uravan	" " " "	1,000	(*)
New Mexico:			
Grants	Anaconda Co.	3,000	1953
"	Homestake—N. Mex. Partners	750	1958
"	Homestake—Sapin Partners	1,500	1959
"	Kermac Nuclear Fuels Corp.	3,300	1958
"	Phillips Petroleum Co.	1,725	1958
Shiprock	Kerr-McGee Oil Industries	300	1954
Oregon:			
Lakeview	Lakeview Mining Co.	210	1958
South Dakota:			
Edgemont	Mines Development, Inc.	400	1955
Utah:			
Mexican Hat	Texas-Zinc Minerals Corp.	1,000	1957
Moab	Uranium Reduction Co.	1,500	1955
Salt Lake City	Vitro Chemical Co.	600	(*)
Washington:			
Ford	Dawn Mining Co.	400	1957
Wyoming:			
Fremont County	Lucky McUranium Corp.	980	1958
" "	Federal-Radorock—Gas Hills Partners	522	1960
Natrona County	Globe Mining Co.	492	(**)
Riverton	Susquehanna-Western, Inc.	500	1958
Split Rock	Western Nuclear Corp.	845	1957

* Dates prior to 1954.

** Dates after 1959.

30. In the fall of 1954, discovery was made by members of the Spokane Indian Tribe of uranium-bearing ore deposits on the Spokane Reservation, located near Ford, Washington, about 40 miles northwest of Spokane. These deposits became known as the Midnight mine, the operators of which constructed the Dawn mill as hereinafter related. The 1954 discovery stimulated various uranium ventures in the area, including among others those of plaintiff Northwest Uranium Mines, Inc., called Northwest.

31. The principal organizers of Northwest were Dr. Frank E. Scott, Clark L. Wilson, and Jack D. Gay, respectively its president, vice president and general manager, and treasurer.

Northwest was an Idaho corporation, which, prior to the change of name on May 2, 1955, was known as Empire Silver Lead Corporation. Empire had been only a corporate shell, without issuance of any of its authorized stock and without any business activity.

The development of Northwest as an active corporation involved plaintiff Silver Buckle Mining Company, an Idaho corporation, hereinafter called Silver Buckle, and three other corporations, Fortune Mining Company, Eastern Lead Mines, Inc., and Pathfinder Uranium Corporation. The original operating capital of Northwest of $60,000 was derived from Northwest stock purchases of $15,000 by each of the four companies named. Shortly after May 1955, various parties in the Spokane area known as the Stansbury Group acquired a stock interest in Northwest in exchange for permits and leases.

32. Dr. Scott, Mr. Wilson, and Mr. Gay initially acquired stock in Pathfinder, Eastern, and Fortune by exchanging leases for shares of stock in each of these companies. As of July 1, 1956, the shares of stock held by each of these men in such companies were as follows:

Company	Dr. Scott	Gay	Wilson	Total shares outstanding
Pathfinder	364,000	364,000	255,000	3,000,000
Eastern	385,165	382,500	100,000	2,400,000
Fortune	338,000	333,000	100,000	2,400,000

By exchanging leases for shares of stock, Scott, Gay, and Wilson had each acquired 45,000 shares in Northwest as of July 1, 1956, when Northwest had outstanding 2,200,000 shares.

In December 1956, Pathfinder, Eastern, and Fortune were merged into Northwest. The basis of the merger was the issuance of one share of stock in Northwest for the surrender of five shares in Pathfinder, Eastern, or Fortune.

After the merger, Mr. Gay held 258,400 Northwest shares, Dr. Scott owned 245,933, and Mr. Wilson, 131,000 of the 2,690,000 outstanding Northwest shares. Silver Buckle was not merged into Northwest, and as of January 1, 1957, held 480,000 Northwest shares.

33. Dr. Scott and Mr. Gay had been associated for many years in mining ventures in the Wallace, Idaho, area. The former was president of Silver Buckle, Fortune and Eastern; the latter was treasurer of Silver Buckle. Together through their substantial share ownership and positions as officers, they probably had working control of Fortune and Eastern.

Mr. Wilson was vice president and manager of operations of Silver Buckle, of Pathfinder, and of the New Park Mining Company of Salt Lake City. New Park Mining Company and its associates, Oil, Inc., and East Utah Mining, owned blocks of stock aggregating over 1,800,000 shares in Silver Buckle. Pathfinder was in turn controlled by officers of New Park Mining and Silver Buckle.

34. The actual dollar expenditure by Dr. Scott and Mr. Gay for their Northwest stock, not considering the time, effort, and expenses incurred in locating and perfecting title

to the various leases surrendered for stock, amounted to approximately two cents per share, or a total investment by each of somewhat over $5,000. Silver Buckle actually expended six to seven cents per share for its 480,000 Northwest shares. The record does not show Mr. Wilson's cash expenditures for Northwest stock.

35. Northwest purchased a Piper D 18-A airplane and retained an experienced pilot, and during the summer and early fall of 1955 conducted an airborne reconnaissance program in the Spokane area, employing a scintillometer in the low-flying airplane to detect radiation "anomalies" which might indicate existence of uranium-bearing ore deposits. Some 25 to 27 anomalies were located and checked by Northwest personnel. Only one of the anomalies proved to be of sufficient interest to warrant development, located on the Spokane Indian Reservation in the vicinity of the above-mentioned Midnight mine.

On September 27, 1955, two Spokane Indians, Clarence Peters and Raymond Boyd, were issued prospecting permits. The Peters permit covered 2,440 acres of land, and the Boyd permit, 2,360 acres, on the Spokane Indian Reservation, and these permits covered all of the Northwest uranium ore deposits hereinafter mentioned.

Assignment of the prospecting permit of Clarence Peters was obtained by Northwest, following the required approval of the Tribal Council and Indian Agency representative, on October 21, 1955. Somewhat later, Northwest obtained an assignment of the Boyd permit.

36. Northwest employed Mr. Gale Hansen, a graduate geologist with extensive experience as a mine superintendent, as superintendent of operations on the Northwest deposits on the Spokane Indian Reservation.

Northwest's general manager was Mr. Clark Wilson, who was a graduate and registered geological engineer, holding an M.S. degree in geology from the University of Arizona, and who had completed the advance management course at

Harvard Business School. Mr. Wilson had had extensive mining experience, having held various positions, including manager of operations of the successful New Park Mining Company.

37. Immediately following the assignment of the Peters permit to Northwest on October 21, 1955, Mr. Wilson visited the Northwest property. Between that time and December 1, 1955, Northwest employed a TD-14 bulldozer for 104 hours stripping overburden to expose the uranium-bearing rock formations for examination. Some preliminary drilling of the property was done in the fall of 1955 under the supervision of Gale Hansen, who prepared maps of the bulldozer cuts and drill holes.

In November 1955, Mr. Wilson visited the Defense Minerals Exploration Administration (DMEA) office at Spokane, Washington, and held preliminary conversations about the possibility of a mineral exploration program on the Northwest property.

Heavy snowfall in December 1955 forced discontinuance of any further work and delayed development activities until the following spring. After further negotiations with DMEA personnel, Northwest's application was approved and a contract executed by DMEA on June 15, 1956, which agency financed part of the exploration costs in developing the Northwest ore body. This contract was amended on November 22, 1957, and thereafter DMEA certified discovery of ore deposits on the Northwest property.

38. By letter dated December 10, 1955, Northwest by Mr. Wilson advised the then manager of Grand Junction that Northwest had a favorable uranium prospect on the Spokane Indian Reservation, that six or eight deep bulldozer trenches had exposed a series of sedimentary beds in which uraninite mineralization was found scattered, and that chemical assays indicated a good commercial deposit. The letter further stated:

Several of the large companies have approached us for some sort of deal on this property. In our talks with them we have made the point that we want to try and retain some interest in the concentrate to insure a depletion allowance to our company.

As we see the situation there are three alternatives to achieve this end. The first, of course, would be for us to have an integrated mining and milling operation, which would mean that Northwest would have to provide the entire financing one way or another.

The second alternative would be for Northwest to retain a partial ownership with some other company in a uranium mill in this area. We feel that this would be an avenue for retention of the depletion allowance.

The third possibility would be for Northwest to have its ore milled by some other company on a toll basis. Our question to you is two-fold: 1. Can we enter into negotiations with the Atomic Energy Commission to sell to you a concentrate from our ore that is treated by some other mill on a toll basis. Another phase of this question might be, can we enter into a contract whereby we have our ore treated on a toll basis then sell the concentrate to the milling firm.

We feel these are both legitimate propositions and would be particularly interested in knowing whether or not there has been any past experience with the Atomic Energy Commission in these types of arrangements.

I have noticed the recent publicity regarding your proposed change in positions, and while we hate to lose you out here in the West, we do hope that the new work back East will be pleasant and interesting.

39. As the then deputy manager of Grand Junction, Mr. Allan E. Jones (manager from February 1956) responded

to Mr. Wilson by letter dated December 14, 1955, stating that AEC could not advise Northwest concerning depletion allowances as such matters involved regulations administered by the Federal Bureau of Internal Revenue. Regarding Northwest's uranium prospect on the Spokane Indian Reservation, the letter stated:

> If you are interested in the possibility of constructing a mill to process ores produced in the Spokane area, the procedure followed by the Commission is to consider detailed proposals submitted by private companies for the construction and operation of a plant and the sale to the Commission of uranium concentrates produced. Concentrates meeting required specifications are purchased by the Commission at unit prices under the terms of negotiated contracts.
>
> In formulating a proposal, the company should make a thorough investigation of the potential ore supply, possible mill sites, possible processing methods, and the cost of constructing and operating a mill for the efficient treatment of the particular ores.
>
> As a matter of good business, the processing company which finances and builds the plant usually assures itself of an adequate ore supply through ownership or contractual arrangements with the ore producers. Since an adequate ore supply is a prerequisite for an economic plant operation, it would seem logical to develop suitable data concerning available ore reserves on which to base a mill proposal.
>
> We are very pleased to learn of your company's interest in the Spokane area and are ready to discuss further with you the possibility of constructing a plant in the area should your investigation of the available ore reserves appear to justify a plant operation.

As related in subsequent findings, the negotiations between Grand Junction and the owners of the Midnight mine for the Dawn mill contract started about the date of this letter, or shortly thereafter.

Northwest did not reply to this letter, nor were any further letters received by AEC from Northwest pertaining to mill proposals or concentrate negotiations until July 1957, as hereinafter related.

40. During the winter of 1955-56, Northwest submitted six ore samples to the Spokane office of AEC. Pursuant to arrangements made by AEC, defendant's Bureau of Mines conducted microscopic and chemical analyses of such samples, without charge to Northwest. On February 1, 1956, the AEC's Salt Lake Explorations Branch provided the report on the samples to Mr. Wilson. The assays showed that uranium mineralization in the ore samples was meta-autunite, and that the U_3O_8 content ranged from .07 percent to .486 percent. The Northwest ore deposits were not carnotite-type or roscoelite-type.

41. On February 6, 1956, Northwest made application to Defense Minerals Exploration Administration (DMEA) for a loan to finance exploratory operations, to determine the nature, extent, and location of the uranium-bearing ore deposits on the Northwest property. While the DMEA application was pending, Northwest did some bulldozing and drilled seven drill holes at its own expense. The loan application was granted and the exploration contract executed with DMEA on June 15, 1956, in the amount of $29,160. Exploratory drilling operations under this contract were thereafter conducted on the Northwest property through October 1956, with 110 percussion and diamond drill holes cut at intervals of 100 feet.

At the time of the execution of the DMEA contract Northwest employed Mr. George Cloward, who had served 8 or 9 years as assistant foreman of operations with the

Tintic Standard Mining Company, to serve as assistant to Gale Hansen, Northwest's mine superintendent.

On July 15, 1957, Northwest drilled four additional holes independent of the DMEA contract. In all, 150 percussion-type and 15 diamond drill holes were completed on the Northwest property.

Each month Northwest performed the drilling work on the property pursuant to the DMEA contract, paid expenses as they arose, and at the conclusion of the month recouped from DMEA 75 percent of the amounts expended.

42. In Northwest's drilling operations, 460 samples were taken of cuttings from the drill holes and tested for U_3O_8 content, drill logs were kept showing depth of overburden and thickness of uranium ore in each hole, and maps were prepared showing cross sections of some holes, the contours of the property, and the number and location of each drill hole. A detailed estimate of mining costs was computed on the basis of amount of overburden to be blasted and/or stripped, and costs in the way of labor, capital investment, depreciation of equipment, interest, taxes, fuel, repairs and other items.

As a result of the drilling, assaying and mapping program at the Northwest property, Northwest made an estimate that its ore deposits contained 683,660.48 tons of uranium ore, assaying an average concentration of .1169 percent U_3O_8, containing 1,578,244.33 pounds of U_3O_8. With the additional drilling of four holes in July 1957, Northwest increased its original estimate to 702,537.08 tons of uranium ore, assaying an average of .1224 percent U_3O_8, containing 1,719,810.77 pounds of U_3O_8.

In making such computations, Northwest used a "cut off point" of .06 percent U_3O_8, that is, considered only ore

having that percentage, or more, of U_3O_8.[1] In the spring of 1957, Northwest computed the Northwest ore reserves by using a .10 percent cutoff to be 416,028.06 tons of uranium ore, averaging .167 percent U_3O_8, containing 1,389,533.72 pounds of U_3O_8.

The AEC Spokane office engineer on the basis of drill logs, maps, and other information furnished by Northwest computed in January 1957 that the Northwest uranium ore deposits on a .06 percent cutoff contained 616,009.75 tons of ore averaging .116 percent U_3O_8, and computed in August 1957 that such deposits on a .10 percent cutoff contained 341,000 tons averaging .166 percent U_3O_8 (lower than the Northwest estimate because less drillings were considered).

Following completion of its drilling under the DMEA program, and on the basis of the data thereby provided, Northwest was able to and did designate the 160 acres for which Peters could apply for a lease under the permit. A lease thereon was granted to Peters by the Tribal Council and the Agency representative on November 10, 1956. Assignment was thereafter made by Peters to Northwest on November 20, 1956, and approved by the designated authorities in February 1957.

43. In late 1955 or early 1956, the Dawn Mining Company, operator of the first discovery on the Spokane Reservation, the Midnight mine, initiated discussions with re-

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[1] In estimating the mineable reserves contained in an ore body, it is necessary to determine the minimum grade ore that can be economically or profitably mined and milled. Such a minimum grade below which reserves are not computed for economic reasons is referred to as the "cutoff point." As applied to Northwest, it was determined by Mr. Porter, after running extensive tests on ore samples, that the economical cutoff point would be .06 percent U_3O_8. It should be noted that although Circular No. 5 provides a payment schedule for ores commencing at .10 percent U_3O_8, in practice it was immaterial to the AEC whether the ores directly met the requirement or whether they were blended.

spect to prospective milling facilities and a concentrate contract with Grand Junction. In the late summer or early fall of 1955, Dawn employed Mr. R. R. Porter, a recognized and well qualified metallurgist with substantial experience in the milling of concentrates from uranium-bearing materials and the design of processing mills for this purpose. As of that time, Northwest had not yet obtained a permit to prospect on the Spokane Indian Reservation.

44. Preliminary discussions between Dawn and Grand Junction extended until April 1956, when Dawn submitted its formal mill proposal as a basis for concentrate contract negotiations. There ensued, as with all mill proposals and prospective concentrate contracts, a detailed review, analysis and evaluation by AEC of all factors pertaining to the proposal and the prospective procurement, as well as extended negotiations between personnel of Dawn and the AEC with respect to all phases of the proposal and prospective contract provisions. Usually such negotiations require 6 months of time. Dawn's efforts to procure a concentrate contract and the pendency of its negotiations with the AEC with respect thereto were matters of general knowledge in the industry for some time prior to announcement of its consummation in August 1956.

45. The terms of all uranium concentrate or mill contracts were individually negotiated between AEC and the various private companies who owned and operated the mills. It was necessary to investigate and establish that sufficient reserves of uranium ore of adequate grade were available to sustain milling operations for an adequate period of time, that such available ores were amenable to economical metallurgical processing, that adequate design had been prepared for the mill, that the proposed mill operator had management ability and financial capacity, and that an acceptable price to the AEC could be reached. The contract price for uranium concentrate varied from contract to contract and was negotiated on the basis of con-

sideration of such factors as the "ore cost", determined by application of the Circular 5 price schedule to both captive and custom ores, the estimated milling costs, which varied depending upon the size of the mill and the metallurgical process required for the particular ore, amortization of the cost of the mill in relation to the life of the uranium concentrate contract, and a reasonable profit to the mill owner, arrived at by consideration of capital investment and related factors.

The Grand Junction manager was authorized to negotiate a uranium concentrate or mill contract, and could execute such a contract for the AEC after approval of the proposed contract by AEC officials in Washington, D. C.

46. One of the major factors considered by AEC in its negotiations with Dawn (as with all mill proposals) was the need for a mill in the area, including an evaluation of the ore owned or controlled by the prospective contractor as well as the known and potential uranium-bearing deposits of "custom" ore tributary thereto, and for which independent producers the prospective mill would provide a market. It was the conclusion of AEC that the ore reserves of the area, as projected from the incomplete exploration and development then accomplished, were sufficient to support a milling operation, and, through the medium of a concentrate contract, a market would be provided for the producers of the area.

The AEC consideration of the Northwest deposits as tributary to the proposed Dawn mill was necessarily limited to information supplied by Northwest to AEC personnel in the way of drilling logs prepared by Northwest on holes drilled as of June 15, 1956, prior to the commencement of the DMEA-financed project, as well as a map, prepared by a Northwest geologist, delineating the ore body on the basis of limited drilling and geological extrapolation.

47. Negotiations between Dawn and the AEC culminated in a formal written unit price contract for the purchase

from Dawn by the AEC of high-grade specification concentrate, containing a minimum of 75 percent U_3O_8, and which, following the required submission to and approval by the Commission in Washington, D. C., was finalized and executed under date of August 8, 1956.

48. On August 9, 1956, the AEC issued a press release announcing that the AEC and Dawn Mining Company had signed a contract for operation by Dawn of a uranium processing mill to be constructed within 12 months and located 40 miles northwest of Spokane, Washington. It was stated that the new mill would process ores from the newly-developed region, including ores developed by Dawn as well as ores brought from independent producers.

49. The Dawn mill was designed and constructed for processing 400 tons of uranium-bearing ore per day and, consistent with AEC policy, was to process both the "captive" ores of Dawn and the "custom" ores of independent tributary producers. The contract provided that 25 percent of the mill capacity would be devoted to metallurgically and economically amenable custom ores of the area which Dawn was required to purchase from independent producers at prices for the U_3O_8 content thereof which were not less favorable to the producers than those in the price schedule of Circular 5.

The Northwest ores were metallurgically and economically amenable to the processes of the Dawn mill, however, because of processing difficulties and the 100 ton per day limitation (actually 20 tons if Dawn chose to buy from other independents), the Dawn Mill did not provide a substantial market for Northwest ores. The unit concentrate price in the Dawn contract was negotiated and based on an assumed weighted average grade of ore fed to process of .19 percent U_3O_8. The weighted average ore grade provided in the Dawn contract, .19 percent U_3O_8, was one of, if not the lowest, in any concentrate contract, the grades in

all contracts averaging from .24 percent to .27 percent U_3O_8 or an average of not less than .25 percent U_3O_8.

50. In August or September 1956, Mr. Wilson contacted Mr. Porter, the consulting metallurgist who designed the Dawn mill, stating that the Northwest deposit was of a lower grade than was normally treated in the mills and inquired of Mr. Porter whether there was any feasible or economic method of treatment which would produce a product from this deposit which Northwest could sell to another mill.

Mr. Porter's initial participation in the program of Northwest was to ascertain whether this low-grade material could be chemically upgraded to produce a product which Northwest could then sell to one of the existing mills, specifically Dawn or Vitro, and from which the purchasing mill contractor could, with further processing, produce specification concentrates which it could sell to the AEC under its concentrate contract.

Mr. Porter was fully versed in the specification requirements of AEC concentrate contracts and all phases of its concentrate procurement program; he knew that the AEC purchased high-grade concentrates only under the express terms and provisions of written contracts with the processor; he further knew that the AEC did not purchase and was not interested in purchasing any upgraded product; and he did not expect or intend that the proposed product, if developed, would be purchased, or offered for purchase, to the AEC.

51. Pursuant to the request of Northwest, Mr. Porter made amenability tests on ore samples provided him by Northwest personnel, metallurgical studies, and explored various approaches on the method of treatment to upgrade the ore. He decided that the ore could be treated or chemically upgraded to produce a wet solution in which the solids, when dried, contained approximately 8 percent U_3O_8. By further processing of this 8 percent slurry

through circuits of another mill, a concentrate containing 70 percent U_3O_8 would purportedly be produced.

52. On or about January 3, 1957, a conference was arranged by Mr. Wilson with the Grand Junction manager, Mr. Jones, with Mr. Porter also in attendance. The purpose of the conference was to bring to Mr. Jones' attention the 8 percent slurry program on which Mr. Porter had been engaged. The discussions involved explanations by Mr. Porter relative to the technical processes, an indication of direction of inquiry in his research, and rough calculations as to production costs. Questions arose and were discussed with respect to the disposition by Northwest of such a product as the suggested "slurry," if produced, to existing mills holding concentrate contracts with AEC, specifically Dawn and Vitro. Mr. Jones stated that this was a matter that they would have to negotiate with the mills, and he suggested that they contact the processors in this regard, and Northwest's representatives indicated they would do so.

It was well known by the conferees that the AEC's purchases were limited to high-grade specification concentrates under contracts with the processor, and that it had never purchased nor was it interested in purchasing any chemically upgraded material or low-grade concentrate such as this slurry. However, Mr. Jones reiterated this AEC policy. Insofar as Mr. Porter was concerned, his participation in the conference was not to request the AEC to purchase such a product, but was only to explore the possibility of the sale of this product by Northwest to processors holding concentrate contracts with AEC.

53. On April 6, 1957, Mr. Jones addressed an industry conference at Moab, Utah, and stated that AEC had never purchased and did not contemplate the purchase of uranium products from upgrading plants, that the physical characteristics of such material made it unsuitable for stockpiling, that such material should be supplied to a mill where high-

grade concentrates are produced, but that such material would not be acceptable to a mill operator unless its metallurgical characteristics were suitable to the particular process being used in the plant.

The foregoing statements of Mr. Jones were in accordance with established policy of the AEC, well known in the uranium industry.

54. Following the January 3, 1957, conference, Northwest's representatives made contacts with Dawn and Vitro to ascertain whether any arrangements could be made to sell them the slurry, if produced. Vitro, located at Salt Lake City, Utah, was dependent entirely on custom ore, and indicated that the material could be introduced in its circuits. It further advised it would be interested in making some arrangements with Northwest if the AEC would increase the quantity provisions of its concentrate contract to cover the material. Introduction of the proposed material into the mill circuits of Dawn would have required alterations to the existing plant, but Dawn indicated it might be willing to accomplish the plant changes and process the slurry if the AEC would increase the quantity limitations of its concentrate contract.

Shipment to Vitro at Salt Lake City involved substantial freight costs as well as drying, drumming, and packaging. The wet slurry solution could be sent in tankers to Dawn, but processed only after expensive plant alterations. Prices quoted by Vitro and Dawn to Northwest were deemed to be prohibitive.

55. By letter dated July 13, 1957, Northwest, by Mr. Wilson, submitted the following request to the Grand Junction manager, Mr. Jones:

> Northwest Uranium Mines, Inc. with executive offices at 907 Walker Bank Building, Salt Lake City, Utah, wishes to enter into negotiations with the Atomic Energy Commission for the installation of a uranium

concentrator and for the sale of a minimum quantity of 1,200,000 pounds of U_3O_8.

The contemplated concentrator does not follow the usual uranium plant design in that we will produce a low grade concentrate assaying approximately 8% U_3O_8 from ore assaying 0.124% U_3O_8, and it is anticipated that the product will be processed further in an existing mill. This can be done either on a custom basis or by contractual arrangement between the Atomic Energy Commission and that mill. In this way the capital expenditure and operating cost of a concentrator can be kept at a minimum. Thus it is possible to treat this low grade ore on the basis of a small scale operation at a concentrate price comparable to that paid for similar grade ores of foreign origin. It is difficult to compare this operation with domestic prices as the milling facilities in this country treat higher grade ores. We estimate that the low grade concentrate can be produced at the mill, either as a slurry or a filter cake, for $7.71 per pound of contained U_3O_8 before amortization. This cost is broken down as follows:

	Cost per ton	Cost per lb. of U_3O_8
Ore cost as per Circular 5 price— @ .124% U_3O_8	$6.15	$3.08
Milling Cost	6.27	3.13
Return on investment	3.00	1.50
Total	$15.42	$7.71

The proposed concentrator will treat 400 tons of ore per day and we expect to recover two pounds of U_3O_8 per ton of ore. The Northwest Uranium Mines, Inc. have developed by drilling approximately 603,000 tons of ore averaging 0.124% U_3O_8 on the Peters Lease that is located on the Spokane Indian Reservation approxi-

mately 50 miles northwest of Spokane, Washington. We have a 10 year lease on 160 acres in the SW¼ of Section 35, Township 38 North, Range 37 East. This ore reserve allows for at least a four year operation at this daily tonnage rate.

The concentrator will be erected at the mine site to eliminate haulage charges and the flow sheet as developed will not accommodate custom ore. The cost of this facility, including accommodations for the operating staff is estimated to be approximately $1,800,000.00, or an amortization figure of $3.00 per ton of ore that is now expected to be available for treatment. This amounts to $1.50 per pound of U_3O_8 recovered.

Studies have been made on the water supply, power, and tailings disposal problems connected with this installation, and both power and water are readily available. The disposal of waste effluents is not a serious problem as the milling solutions after neutralization are reused in the circuit.

In establishing the price of the ore feed to the plant, it would seem logical to us to establish a firm price based on the estimated ore reserve grade because of the uniformity of the U_3O_8 values in the deposit. This would eliminate considerable overhead accounting expense.

In our original analysis on the cost of refining the eight (8) percent uranium product to a yellow cake of acceptable grade it was estimated that this could be done in a custom mill using either ion exchange or a solvent extraction for approximately $1.25 per pound of U_3O_8 contained in the product with a 99 percent recovery. Quotations recently received from Dawn Mining Company and Vitro Uranium Company indicated, however, that this proposed custom price cannot be obtained. The added U_3O_8 to be treated at Dawn represented an increase in the capital investment

of this plant, and the cost of transportation and losses when shipped to Vitro increased the price of the product to such a degree that it would be more economical for Northwest to consider other methods of producing a final product.

By the addition of a continuous ion exchange unit and simplified precipitation procedure it is anticipated that Northwest Uranium could produce a 70% U_3O_8 product for the $1.25 per pound of contained U_3O_8 including capital repayment. As an alternative, however, it should be possible to increase the grade of the precipitate to approximately 15% by the use of ammonia instead of lime, and this product could be blended with other concentrates at the Atomic Energy Commission receiving depot and shipped direct to a feed materials plant such as Fernald or Mallinckrodt.

Mr. R. R. Porter has completed the cost analysis and metallurgical report on the upgrading process through the production of the 8% product. We would like to discuss all phases of this proposal at your earliest convenience at which time we will submit Mr. Porter's analysis.

We enclose for your information letters from Dawn Mining Company and Vitro Uranium Company indicating their proposals for the cost of upgrading the 8% product. These costs do not include freight and handling charges from the Northwest concentrator to the mills.

The attached letters from Dawn and Vitro to Northwest quoted the respective prices and terms of the mills for processing of the slurry, and indicated that changes would have to be negotiated between the AEC and the mill operators in the terms of pertinent mill contracts.

56. Mr. Porter had prepared detailed information, tests, flowsheets, estimates and other back-up detail for the pro-

posed concentrator for producing the slurry. This back-up material was not submitted with the July 13 letter, however, but was subsequently submitted, as noted in succeeding findings, with the Northwest's submission of October 9, 1957.

Mr. Porter, who prepared the technical detail, in testifying with respect to the July 13, 1957, letter, stated that, in order to get some basis for negotiating a contract for "treatment of this ore", he considered it necessary that they send a letter to the AEC briefly outlining the development and cost of the 8 percent slurry. He stated that he and Mr. Wilson prepared the letter together. He further testified that the basic purpose of the letter of July 13, was to submit a suggestion to the AEC that Northwest would like to start negotiations for a contract with respect to an upgraded product.

57. On July 23, 1957, Mr. Wilson telephoned Mr. Jones and inquired as to what AEC action had been taken on Northwest's July 13 submission, and Mr. Jones replied that he had not had time to study it, and that Grand Junction was not prepared to discuss the matter.

58. In connection with a trip to Washington, D. C., on other business in late July 1957, Mr. Wilson of Northwest met with Mr. Johnson, AEC's Director of Raw Materials. The Grand Junction Manager, Mr. Jones, was in Washington at the time on other matters, and attended the meeting.

Mr. Johnson discussed the general uranium supply situation and told Mr. Wilson that the supply was increasing as compared to the previous 2 or 3 years. Mr. Wilson "quizzed" Mr. Johnson about the Northwest submission of July 13, 1957, and Mr. Johnson replied that the AEC was not prepared to discuss the matter at that time.

59. On August 6, 1957, Mr. Wilson telephoned Mr. Jones at Grand Junction, and they discussed the Vitro quotation for processing of Northwest's proposed slurry. Mr. Jones

requested Mr. Wilson to discuss the matter further with Vitro.

On August 19, 1957, Mr. Wilson tried to reach Mr. Jones by telephone, but was told that Mr. Jones was on vacation, but could be contacted at the American Mining Congress meeting in Salt Lake City in September.

Mr. Wilson next saw Mr. Jones at Moab, Utah, on September 14, 1957, and requested a conference, which was arranged for a later date.

60. On September 23, 1957, the date appointed for the meeting, Mr. Wilson, Mr. Porter, and Dr. Scott of Northwest met at Grand Junction with the Grand Junction manager, Mr. Jones. Also in attendance was a Mr. Arentz who attended with Northwest's representatives.

Mr. Jones advised that Grand Junction had not considered the July 13, 1957, submission of Northwest, and that the AEC was having problems concerning change of policy due to increased supply of uranium ore reserves. Mr. Wilson dscussed Northwest's contacts with Vitro and Dawn concerning processing of the proposed slurry product, and advised that the quotations of both mills would require a concentrate price much higher than that which would result if Northwest operated its own uranium mill.

Mr. Jones remarked that Northwest's proposed price of $10.46 per pound for yellow cake was one of the most reasonable prices ever presented, but that AEC was looking to the guaranteed price of $8.00 per pound for uranium concentrate.

Mr. Porter then advised that the concentrator plant, proposed by Northwest in its July 13, 1957, submission, could be converted into a uranium concentrate mill by addition of an ion exchange unit, and that he had pretty well laid out the whole design for such a complete mill.

There were discussions about the financing of such a mill, in which Mr. Arentz participated, but there was no definitive presentation or showing that Northwest had or could arrange for the financing to construct the mill.

Dr. Scott's version of Mr. Jones' remarks about increased supply of uranium ores and the prospective price of $8.00 per pound for uranium was that Northwest was getting the "brushoff" and that AEC had all the uranium it wanted.

Mr. Jones, however, suggested that Northwest submit its proposal concerning a uranium concentrate and mill contract, including an analysis of all costs, and that such would be reviewed and considered.

61. Under date of October 9, 1957, Northwest made its submission discussed in the meeting of September 23, 1957, to the Grand Junction manager. The covering letter, written by Mr. Wilson (countersigned by Mr. Porter) for Northwest to Mr. Jones stated as follows:

> As a supplement to our letter of July 13, 1957, and our conversation of September 23rd, we are pleased to submit the metallurgical test results, the capital cost estimate, and the operating cost estimate for the production of a low grade U_3O_8 concentrate which could be produced by an upgrading unit located on the Spokane Indian Reservation, to treat the ore body of Northwest Uranium Mines, Inc. These estimates are the supporting figures for the cost as given in our letter of July 13th.
>
> It was your suggestion that in addition to these figures we submit a rough estimate of the increased capital cost and operating cost which would be incurred should the flow plan be changed to include the production of a high grade product. This would be done by a continuous ion exchange process. This unit should give lower costs per pound of U_3O_8 produced than any process now used, and can be broken down as follows:

Operating Costs

1) Supplies:

The leaching and neutralization reagents as given in the milling cost breakdown would remain unchanged as the same amount of acid, lime and flocculating agents would be required to leach, the ore, to produce the clear solution, and to neutralize the barren solution as are required for the production of the low grade product. Thus, the added cost of chemicals for the production of the yellow cake is as listed below:

Loading—3.0 lbs. U_3O_8 per cu. ft.
Production 800 lbs. U_3O_8 per day.
Resin to be loaded per day—275 ft.

Nitrate losses @ 5.1 lbs./cu. ft.	= 1400 lbs.	100% NO_3
Nitrate recovery @ 65%	= 900 lbs.	100% NO_3
Net nitrate loss	= 500 lbs.	100% NO_3
H_2SO_4 for nitrate recovery	= 1500 lbs.	
CaO for acid neutralization	= 900 lbs.	
NaOH for U_3O_8 precipitation	= 200 lbs.	

Reagent cost:

NO_3 @ 5¢ per lb.	= $25.00	
H_2SO_4 @ 28.00 per ton	= 21.00	
CaO @ 1½¢ per lb.	= 13.50	
NaOH @ 5¢ per lb.	= 10.00	
	$69.50	= 8.3¢ per lb.
Resin life 600 cu. ft. @ $42.00 @ 2 years		= 4.5¢ per lb.
Separan for settlement of precipitates		= 1.0¢ per lb.
Drums, freight & insurance for shipment of yellow cake		= 4.0¢ per lb.
Fuel for dryer and filter cloths		= 1.0¢ per lb.
Total Supplies		= 18.8¢ per lb.

2) Labor:

The additional labor required over and above that given would be one ion exchange operator plus one reagent handling man per shift. One additional assayer would be required.

Thus, the total additional labor would be:

Operator and helper 3 shifts @ $20.00/shift	= $3,600.00	
1 assayer @ $500.00	= 500.00	
	$4,100.00	
Payroll overhead @ 16% of above	= 640.00	
Total labor cost per month	= $4,740.00	
Cost per lb. of U_3O_8 ..	=	19.7¢ per lb.
3) Maintenance of equipment @ 6% of capital cost per year	= 18,000.00/year	6.2¢ per lb.
Total cost per lb.		44.7¢ per lb.

The capital cost of the additional facility has not been exactly priced as equipment quotations have not been received, but most items of the equipment used for the production of the low grade would be utilized for the precipitation of U_3O_8 except that they would be reduced in size. Thus, the additional cost would be incurred in the ion exchange unit, reagent handling, elutriation tanks, and resin. Some addition to the building would also be required. The ion exchange unit is very roughly estimated at an increased installed cost of $300,000.00. This figure, while not precise, is of the right order of magnitude, when compared with installation costs on other jobs. This increase in the capital cost would increase the price of yellow cake by $300,000/1,200,000=25¢ per lb. of yellow cake. Interest and return on the investment of this additional capital should be of the order of 20¢ per lb. of U_3O_8 or 40¢ per ton of ore treated.

The total cost of yellow cake would thus be:

	Cost per ton of ore	Cost per lb. of U_3O_8
Ore Cost	$6.15	$3.08
Milling Cost	6.27	3.13
Yellow Cake Production	0.90	.45
Return on Investment	3.40	1.70
Total before Amortization	$16.72	$8.36
Amortization of Capital $2,100,000	$3.50	$1.75
	$20.22	$10.11

We consider these figures to be very realistic on what might be accomplished in the milling of low grade ores at relatively low tonnages, and you will note that we have estimated a direct operating milling cost for the production of yellow cake of $7.17 per ton of ore treated. This figure compares very closely with actual costs at operations treating four times the tonnage at similar grade.

In view of all these factors we trust you will give our proposal your favorable consideration.

The attached equipment flowsheet, consisting of eight pages, showed in diagrammatic form the proposed progression of uranium ore and other necessary materials through the various sections of the proposed plant, i.e., grinding, leaching and de-watering, precipitation, reagent handling, and product handling and lime cake sections.

Also attached was a two-page summary sheet of estimated capital costs, covering milling equipment, mill buildings, outside facilities, and miscellaneous items, showng total capital requirements to be $2,223,000; a 28-page schedule of estimated equipment cost, itemizing numerous items and setting forth the cost for each f.o.b. Spokane; a 3-page

schedule listing various items of equipment and the installed horsepower of each; a summary sheet of operating costs; a breakdown of personnel and salaries of supervisory staff of plant; a table of the various types of labor required and estimates of wage costs; a table of operation costs and costs of supplies; a schedule of payroll overhead; and a schedule of insurance costs and taxes.

Also attached was a 21-page discourse concerning metallurgical tests conducted on samples of Northwest uranium ores, upgrading by mechanical means, mechanical handling of the ore, precipitation procedure, counter flow leach test, counter flow and leaching tests, oxide liquor precipitation, and precipitation tests.

62. By letter dated October 22, 1957, the Grand Junction manager advised Mr. Wlson of Northwest as follows:

> This will acknowledge receipt of your letter of October 9, 1957, which supplements your letter of July 13, 1957, and submits the results of metallurgical test work, the capital cost estimate, and the operating cost estimate for the production of a low grade uranium concentrate which could be produced by an upgrading unit located on the Spokane Indian Reservation to treat the ore body of the Northwest Uranium Mines, Inc. We also appreciate having your rough estimate of the increased capital cost and operating cost which would be incurred should the flow plan be changed to include production of a high grade uranium concentrate.
>
> The Commission is presently making a review of the Government's requirements for future purchases of uranium concentrates. When this review has been completed, we will be in a better position to evaluate your proposed plan of operation and whether production of concentrate from this source would be consistent with future procurement requirements.

We regret the delay in advising you concerning your planned operation, but will give your proposal every consideration.

63. The evidence establishes clearly that the submission by Northwest on October 9, 1957, was one that would have required extensive investigation and consideration by the staff of Grand Junction and several months of negotiation at the Grand Junction level before the terms and conditions of a uranium concentrate or mill contract could have been reached between the AEC and Northwest, if at all.

Because of the policy statement contained in the speech of Mr. Johnson of October 28, 1957, above-quoted in finding 26, no such consideration of Northwest's submission was ever given by AEC, nor were there any negotiations conducted between Northwest and AEC toward accomplishing a uranium concentrate or mill contract. This was consistent with the AEC's announced intention in the October 28 notice that pre-October 28 proposals would be considered "in the light of the discussions which have taken place." The record shows that in the discussions which had taken place, Northwest's officials had been advised of the AEC's concern over the need for continuance of the existing uranium program.

64. Northwest mined no portion of its ore deposit. It did not procure a source material license, a prerequisite for ore delivery. It neither delivered nor tendered for delivery any uranium-bearing ores to the AEC at its Monticello, Utah, buying depot or at any other location. The Dawn mill, to which its deposit was tributary, was completed and in operation in July-August 1957, and provided a market for Northwest's ores in the immediate vicinity of its deposit. Because plaintiff realized it had no formal contract, it did not take action to place itself in a position to mine, produce, or deliver any uranium-bearing ores, it did not obtain the initial production bonus on the first 10,000

pounds of U_3O_8 in ores from a producing mine which it could have obtained under Circular 6.

65. Northwest was voluntarily liquidated at the instance of the shareholders, or controlling shareholders, in May 1958, assertedly for the reason that its assets were insufficient to enable it to engage in the profitable exploitation of the leased property by the mining and milling of ores. Mr. Gay, the treasurer of Northwest, was appointed as trustee and is party-plaintiff in that capacity.

Concurrently with the liquidation and as a part of the same transaction, Northwest sold, transferred, and assigned all its right, title and interest in and to the leased properties on which these deposits were located, and other assets, to the Silver Buckle Mining Company, under contract dated March 15, 1958, effective May 10, 1958, for a stated consideration of $2,500,000, and a division of the net profits realized by Silver Buckle from the exploitation of the uranium ores present in or upon these properties.

Mr. Gay thereupon discontinued as treasurer of Silver Buckle and became its salaried office manager as well as trustee for Northwest's shareholders. His stock interest in the two companies remained unchanged. The positions and interests, direct and indirect, of the other two principals, Dr. Scott and Mr. Wilson, in Northwest and Silver Buckle continued as set forth in preceding findings.

66. Following transfer of the lease interests to Silver Buckle from Northwest, and on May 15, 1958, Silver Buckle applied for and obtained a source material license. Stripping and other preparatory mining activities were thereafter undertaken. In June 1958, Silver Buckle and Dawn entered into an ore procurement agreement providing for purchase by Dawn from Silver Buckle of a minimum of 60 tons of ore per day for a 1-year term commencing on July 1, 1958.

The contract between Silver Buckle and Dawn required that the Silver Buckle ores delivered for processing at Dawn mill have an average grade of not less than .20 percent U_3O_8, later reduced to .19 percent. This necessitated expensive selective strip mining of the Silver Buckle ore deposits, stockpiling for possible future use of large quantities of low-grade ores, and use of mechanical upgrading equipment on the selected ores processed and delivered to the Dawn mill.

67. Silver Buckle did not complete preparatory activities until late August, however, and the first ore from the property (Peters Lease) was then produced. Thereafter, Silver Buckle made application for certification of the Peters Lease for the initial production bonus under Circular 6, and through production and delivery of the requisite quantities of ore assaying .20 per cent U_3O_8 or higher, obtained bonus payments in the maximum amount provided in the Circular, i.e., $35,000.

68. From the inception of production until disposition of the property by Silver Buckle in March 1960, the ores produced were sold by Silver Buckle to Dawn under and in accordance with agreements between the parties, from which Silver Buckle realized the sum of approximately $821,000, including the initial production bonus paid by the AEC pursuant to the application filed by Silver Buckle. Silver Buckle incurred a net loss in this venture, however, because of the high costs of mining as a custom producer.

69. When Silver Buckle acquired the Northwest leases and commenced the first mining operations on the Peters claim, it had full knowledge (a) that the AEC on October 28, 1957, had publicly announced the prospective limitation of future concentrate purchase commitments; (b) that with specific reference to the Spokane area, the AEC had reached a determination that existing milling facilities at Dawn provided an adequate and reasonable market for the ore producers of that area, and that no further concentrate pro-

posals for that area would be entertained; and (c) that the AEC had refused to entertain numerous requests made by Northwest after October 1957, concerning special concessions or milling arrangements at the Dawn mill which would have enabled Northwest to market large tonnages of low-grade ores and thereby dispose of all of its ore reserves on or before March 31, 1962.

70. On or about March 1, 1960, Silver Buckle sold, transferred, and assigned its right, title, and interest in and to the leases and mineral rights to Dawn Mining Company for the sum of approximately $1,000,000.

CONCLUSION OF LAW

Upon the foregoing findings of fact, which are made a part of the judgment herein, the court concludes as a matter of law that the plaintiffs are not entitled to recover and the petition is, therefore, dismissed.

APPENDIX B.

(All of the following are from Df. Ex. 1)

1. "Progress is being made in the search for uranium but greater effort is needed. The Commission recognized at the start that if the mining industry is to make this effort, *the chances of reward must be commensurate with the risks involved.* Our buying program was designed to provide an adequate incentive with the flexibility needed to meet new conditions. . . . *As long as the Government is the sole purchaser of uranium, and industry must depend upon the Government for its market, the Government must give adequate guarantees both as to price and the period of purchase,* if industry is to finance and operate mines and plants." (8/30/50, pp. 4, 7). (Emphasis added.)

2. "Promising prospects have been found in Colorado, Utah, Arizona, New Mexico, Nevada, Wyoming, Idaho, Montana, and Michigan. . . If uranium mining is to be left to private industry, established mining companies must take the initiative wherever economically feasible. . . ." (8/30/50, pp. 3, 4).

3. "How long will the demand for uranium continue? In my opinion [Director of Division of Raw Materials, AEC, Mr. Jesse C. Johnson], *the market for uranium is here to stay. . . .*" (8/30/50, p. 7). (Emphasis added.)

4. "But putting first things first, the ore must be found, and it is in this field that man's force is initially applied for uranium production. *Incentive is there in the form of rich reward* for those who have the combination of skill and good fortune that enables them to find a valuable uranium deposit." (9/23/53, p. 1). (Emphasis added.)

5. "The physical area of active participation in the uranium industry is expanding, having grown from an

initially localized effort primarily in western Colorado to encompass districts in Utah, Arizona, New Mexico, Wyoming, and even more distant places. . . . *Stability has been assured in the industry for a long time to come.* Only recently announcement was made that Circular 5, revised, prices for uranium ores would prevail through March 30, 1962. Circular 6 providing for initial production bonus has been extended through February 28, 1957. *This assurance established a firm economic foundation on which private industry can plan ahead.*" (1/29/54, pp. 1, 2). (Emph. added.)

6. "*The opportunities then are for the enterprising prospector who through skill, luck and work is able to discover new ore bodies.* These opportunities are also for the miner and mill operator who, by developing more efficient methods, are able to shave costs, thus, producing greater profits or even translating mere mineralized areas into exploitable ore bodies." (1/29/54, p. 5). (Emphasis added.)

7. "*The defense program requires all the uranium we can get.*" (5/8/54, p. 16) (Emphasis added.)

8. "The Atomic Energy Act *clearly establishes a Government monopoly in terms of ownership and control,* . . . Recent ore discoveries in our Western States insure that the steady growth we have witnessed to date in domestic uranium production *can now become more rapid. . . . Guaranteed ore prices and milling contracts are likely to provide a reasonable assurance for returns of capital. . . .*" (5/8/54, pp. 4, 9, 18). (Emphasis added.)

9. "The drive to build up uranium production began early in 1948 when we had billion-dollar wartime plants to produce fissionable material but an inadequate supply of the basic raw materials—uranium. . . . The uranium to feed these plants had to come from

new sources. . . . *Uranium requirements to feed these plants continue to rise.*" (9/24/54, pp. 1, 5). (Emphasis added.)

10. "Guaranteed ore prices and milling contracts are likely to provide reasonable assurance for return of capital and permit profit during the life of the present program *so that the uranium producer can afford to take a chance on the future*—a future which may bring rich rewards." (5/8/54, p. 18). (Emphasis added.)

11. "*Uranium production under the defense program can be a profitable business.* The growth of the mining and milling operations, and the private capital that is being invested in these operations, are ample proof of that statement." (9/24/54, p. 8). (Emphasis added.)

12. "There are vast areas throughout our Western States that may contain uranium deposits similar to those to be mined—*but the problem is to find them. . . . The Government market is guaranteed through March 31, 1962,* and beyond that it still could be a factor until the commercial market can sustain a production rate of some importance." (4/5/55, p. 4). (Emphasis added.)

13. "The military requirement still is the predominant factor in determining the Commission's uranium procurement program. . . . Although large reserves of ore have been developed, industry has been planning to mine as much as possible before 1962. *We need exploration and development to support production after 1962.*" (6/15/56, pp. 1, 6). (Emphasis added.)

14. "The price schedule had to provide the incentive for exploration. *Prospecting and exploration entail large risks. Therefore, there must be the opportunity of rich rewards for important discoveries. . . . We need exploration and development to support production after 1962. This called for an extension of a guaranteed Government market.*" (6/25/56, pp. 4, 6). (Emphasis added.)

APPENDIX C

Northwest worked closely with A.E.C. personnel during the period of time intervening between Mr. Wilson's letter of December 10, 1955 and Northwest's formal proposal to the A.E.C. made on July 13, 1957. Mr. Hetland, who was in charge of the A.E.C. Spokane office visited Northwest's property approximately fifteen times during 1956 (he had also visited it in November of 1955 after which he wrote a preliminary report for the A.E.C.) and he called on Northwest personnel at Northwest's home office in Wallace, Idaho. (Hetland, Tr. 656; Jt. Ex. A-12). During these visits the subject of Northwest's contemplated mill was discussed between Mr. Hetland and Northwest personnel. Mr. Hetland was specifically aware of the site where the Northwest mill was to be erected. On February 1, 1956 Mr. Hetland forwarded uranium samples from the Northwest uranium property for assay and mineral identification to Ernest E. Thurlow, Chief, Salt Lake Explorations Branch, Division of Raw Materials, A.E.C., who in turn forwarded the chemical laboratory report and microscopic examination of the samples to Mr. Wilson.

Mr. Melvin Papulak of the A.E.C. Spokane office had frequent contacts at the Northwest property with Superintendent Cloward (who had been employed to serve as assistant to Mr. Gale Hansen, Northwest's mine superintendent. Mr. Cloward had served eight or nine years previous to his employment with Northwest as assistant foreman of operations with the Tintic Standard Mining Company.) Mr. Papulak would periodically pick up the Northwest radiometric log books and contour maps. On January 9, 1956 Jim Barlow of the A.E.C. Spokane office picked up the log books showing the Northwest ore body chemical assays. (Tr. 572). Extensive mapping of the Northwest ore body was also done by representatives of the A.E.C.

In both 1955 and 1956 Mr. Dudley Davis, Assistant Manager of the A.E.C. Salt Lake Office visited the Northwest property several times in line with his official duties as an A.E.C. representatives and prepared an estimate of the ore reserves. (Tr. 759, 761). On July 23, 1956 Mr. Davis returned a map and drill logs to Northwest which map and logs had previously been left with Mr. Davis. (Jt. Ex. A, item 5.) On September 28, 1956, Mr. Wilson advised Mr. Davis that Northwest was continuing with further testing of the Northwest ore body. (*Id.*, Item 7.)

On October 9, 1956, Mr. Davis directed a letter to Mr. Wilson which identified the mineral from drill ores from the Northwest ore body and concluded therein: "We hope this information will assist you in planning a beneficiation process for this ore." (*Id.*, Item 8.)

On October 10, 1956, Mr. Wilson answered Mr. Davis' letter of the previous day. (*Id.*, Item 9.) There followed exchanges of correspondence between Northwest and the A.E.C.'s Don Hetland (*Id.*, Items 11, 12.) wherein Northwest advised the A.E.C. that a lease of 160 acres had been applied for on the Peters' land.